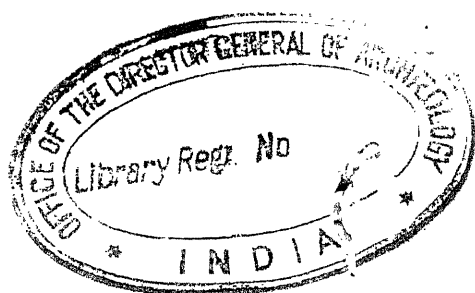


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(PART 1.)

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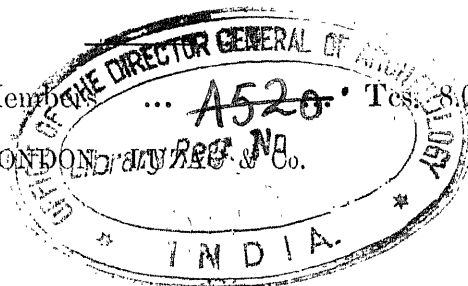
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THE SIAM SOCIETY.

(FOUNDED 1904.)

For the Investigation and Encouragement of Arts, Science
and Literature in relation to Siam, and neighbouring
countries.

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Abstract of Proceedings of the Council of the Siam Society.

At the 89th meeting held on Tuesday, May 30th, 1922, at the old British Court House the President proposed that the name of H. R. H. the Prince of Kambaeng Bejra, Commissioner-General for Railways, should be submitted to the next Ordinary General Meeting for election as Hon. Vice-President of the Society according to rule No. 8. This was agreed to.

The Hon. Secretary reported that about 25 members had sent in replies to the circular sent out by the Society last December, proposing to form "groups" or "sections" for studying various scientific subjects as indicated therein. The sub-committee considered that this was enough to justify them in forming about five "sections" and had provisionally appointed leaders for each of them, and dates for the opening meetings. These dates, however, depended upon whether the Society was able to find permanent quarters before then.

The Hon. Secretary reported that The University of Padua had sent a notice of the 7th centenary of its foundation and had invited the Siam Society to send delegates for its celebration on May 14th-17th. The President had written to Prof. F. G. Pullé of Bologna University (Corresponding Member) requesting him to attend on the Society's behalf. A similar invitation had been received from the Société Asiatique de Paris for their centenary on July 10th-13th, and the President had invited Prof. F. Lorgeou (Hon. Member) of Paris, to be our representative on that occasion.

At the 90th Council Meeting held on July 14th, 1922, at the old British Court House, at 6-30 p.m. a letter from Mr. J. Crosby was read by the President, saying, that owing to his permanent departure from Siam to take up the position of British Consul-General at Batavia, he was obliged to resign from the Society. After nearly 18 years' connection with the Siam Society, in one capacity or another, he bid farewell to his colleagues on the Council and to his fellow members, with much regret. The President expressed the regret of

the Society at losing Mr. Crosby, and Prof. Cœdès proposed and Mr. Nunn seconded that Mr. Crosby's name should be brought before the next general meeting for election as an Honorary Member—Carried.

The question of fixing the price of the next number of the Society's journal to non-members, according to rule 22, was brought up. It was mentioned that the cost of production of the last number was so heavy, that the price of Tes. 6.00 asked for it was not enough. The forthcoming number would also be an expensive one, and it was therefore proposed to raise the price of it to Tes. 8.00. This was agreed to.

At the 91st meeting, held at the old British Court House, on August 10th, 1922, at 6-15 p.m. it was decided to present His Royal Highness Prince Damrong Rajanubhab, the Vice-Patron of the Society, with an address of congratulation in commemoration of His Royal Highness's 60th birthday. Major Seidenfaden submitted a design he had received from the Arts and Crafts School for a case for the address. It was to be executed in leather, with symbolical and other figures upon it in silver. The address to be engrossed on hand-made Siamese paper with space for the signatures. The design was examined and approved, and Major Seidenfaden was appointed to look after its production. It was agreed that the address should be in English.

ORDINARY GENERAL MEETING.

An ordinary general Meeting of the Society was held at the new rooms in Chartered Bank Lane on Monday, October 2nd, 1922, when a most interesting paper was read by Prof. G. Cœdès, (Vice-President), entitled พราพิณ "Etude sur les ex-voto amulettes et autres empreintes Bouddiques en terre cuite et en metal." This lecture was delivered in French, and about 35 members and their friends were present. A large number of ancient and curious earthenware and metal charms or figures (known as Pra pim) were displayed, and the learned professor's paper was much enjoyed by an appreciative audience.

This paper will be published with illustrations, in an early number of the Journal.

The President, Mr. Graham, was in the chair, and before inviting Prof. Coëdes to read his paper, he submitted the name of H.R.H. the Prince of Kambaeng Bejra, Commissioner-General for Railways, to the meeting for election as Hon. Vice-President of the Society. The President remarked that His Royal Highness was well-known as a distinguished authority on all matters connected with transport and travel in this country, and that his acceptance of election was an honour to the Society. The election was carried unanimously by acclamation.

The President then submitted the name of Mr. J. Crosby, C.I.E., O.B.E., late British Consul-General and now serving in that capacity at Batavia, for election as Honorary Member. Mr. Crosby had been connected with the Society for many years, both in a private capacity, and as a member of the Council, and it was with much regret that the Society received his resignation. The election of Mr. Crosby was carried unanimously.

After Prof. Coëdes had read his paper, a few questions were asked by interested members, and replied to by the Professor and the meeting terminated.

THE SOCIETY'S HEADQUARTERS.

Ever since its foundation, the Siam Society has laboured under the disadvantage of being without a permanent "home" or headquarters either for holding its meetings, or housing its library.

In the early days when its membership was comparatively small, and its library comprised a few books only, it was found sufficient to hire a room from time to time for the meetings and to pay a small sum in rent for house room for the small book shelf which contained the library. The great expansion, however, which has occurred during the last year or two in the membership, and the large additions to the library have made it imperative that the Society should find some room which it could call its own. Such a room has now been found on the first floor of the former Falck & Beidek building, familiarly known as the "Hang Singto" in Chartered Bank Lane, which is conveniently situated, and suitable for the purposes of the Society.

The Library which for some time past has been housed in the Royal Library through the kindness of H.R.H. Prince Damrong, has been removed to the new room, and is open for the use of the members on Wednesdays and Saturdays from 5-30 p.m. to 7-30 p.m. when the Assistant Librarian is in attendance. The rent, furnishing, lighting and attendance are expenses which the Council feel are justified by the recent large increase in the membership. The "study sections" which are mentioned elsewhere, are designed to promote a still further increase, for it is hoped that when the activities of these sections become known, many persons who are not at present members, will join in order to take advantage of the facilities they afford for study, and the exchange of information regarding subjects of scientific interest connected with Siam.

It is suggested that members possessing articles likely to be of interest to the Society, such as photographs, old prints, models or relics, etc., connected with Siam, might donate or loan them for exhibition in the Society's room, which makes a very appropriate repository for such objects, for the interest and benefit of all the members.

THE STUDY SECTIONS.

Some months ago, the Council of the Siam Society issued a circular to the members proposing that groups or sections for the study of various scientific subjects should be formed. The object of this proposal, it was stated was "to give to every member who came to take advantage of it the fullest possible benefit of his membership in the Siam Society, and to bring members of similar tastes in touch with each other."

A leaflet containing a list of the various subjects accompanied the circular and members were requested to mark any of them in which they were interested and return it to the Hon. Secretary, when, if the response was sufficient, arrangements for making up the sections and appointments for meetings, could be made.

Replies came in rather slowly, but in the course of a few months some twenty-five leaflets had been returned, and the Council considered they were justified in proceeding with the scheme. Un-

fortunately, the lack of a permanent meeting room was a serious obstacle to commencing work, and it was not until the Society had acquired its present handsome quarters that it was possible to notify the members that the sections were formed, and were ready to commence their meetings.

The Sections now formed and in operation are as follows :—

1. Technology and Fine Arts.

Leader : Mr. J. G. Raggi.

Hon. Secretary, Dr. Eldon James.

2. Sociology.

Leader : Mr. B. O. Cartwright.

Hon. Secretary, Mr. J. Michell.

3. Physical Anthropology.

Leader : Dr. J. R. Redfield.

Hon. Secretary, Mr. B. O. Cartwright.

4. Archaeology, Literature and comparative Philology.

Leader : Prof. G. Cœdès.

Hon. Secretary, Major Seidenfaden.

5. Agriculture, Transport and Travel etc.

Leader : Mr. W. A. Graham.

Hon. Secretary, Major Leo Day.

The opening meetings were chiefly concerned with appointments of officers and arranging their programmes and dates for future meetings etc. The attendance was not large at any of them, but a lively interest was shown by those who did attend, and the discussions showed that there was a large and most interesting field of research in each of the subjects mentioned.

The Council trust that this development will be heartily supported. All members whether they have already sent in the list of subjects or not, are cordially invited to attend the meetings. The object of the movement is for the free exchange of ideas and information regarding any subject of interest appropriate to the known aims of the Society, not necessarily confined to those suggested on the circular, and not merely the delivery of lectures by "experts". Any further information regarding the sections will be readily supplied by the several Secretaries, or by the Hon. Secretary of the Society.



POTTERY IN SIAM.

At a meeting of the Siam Society held on the evening of the 29th March the President, Mr. W. A. Graham, read a paper on "Pottery in Siam". The lecturer had before him a long table on which were arranged numerous earthenware and porcelain objects, which he exhibited to illustrate his remarks.

Mr. J. Crosby, C. I. E., who was in the Chair, having made an introductory statement, Mr. Graham read his paper and subsequently an informal discussion took place, the audience examining the exhibits and discussing them with considerable interest.

Mr. W. Blankwaardt referred to allusions made by the lecturer to the National Museum and suggested that the Siam Society might approach the Authorities with a view to an alteration of the hours during which the Museum is open, the present arrangement being ill adapted to the public convenience. To this the President replied that the Society would do what it could in the matter, and it is interesting to note that by the kindness of H. E. the Director General of the Royal Fine Arts Department more suitable arrangements have since been made.

Mr. Graham's paper was as follows:—

I

The word *Keramic* includes in its meaning anything pertaining to pottery, and *Keramics* is a general term for the study of the art of pottery.

Pottery in its broad sense, includes all objects made from clay and then hardened by fire, from the roughest earthenware to the most refined and delicate porcelain, and it is to a consideration of such objects, either made in, or peculiar to, Siam, that I now invite attention.

The first thing that strikes one on approaching the subject is the evidence of the extreme antiquity of man's knowledge of the

use and value of burnt clay. How he first came by that knowledge there is, of course, no direct evidence of any sort, and all we can do is to surmise that somewhere about the period when the discovery of the uses of fire caused him to leave off being a raw flesh and berry eating creature, he may have begun to feel a want for something in the shape of a receptacle for the storage of the food he was learning to accumulate; in fact the beginnings of a larder. For this he may at first have used a simple hole or depression excavated in the ground, and finding that unsatisfactory because he couldn't carry it about, he may have taken a lump of damp clay from the nearest river-bank and flattened it or squeezed it into some sort of shape and so have obtained, when it dried and hardened, a portable receptacle of a kind, in which he could carry his cooked food when hunting his prey or running away from his enemies. The next development would probably be an unintentional scorching or baking of some such dried mud receptacle, and the consequent accidental production of a "pôt", a strong, hard object, impervious to water and of a cheerful red colour, pleasing to the sight and, by increasing his mobility, of the greatest assistance to man in his struggle for existence with the sabre-toothed tiger, the hairy mammoth and other monsters that made human life precarious and exciting in the later Paleolithic age.

Whether or not such surmise is anywhere near the truth as to the origin of pottery, will never probably be known, but it is known that the very earliest dawn of historical times found the art of making pottery in a highly developed condition, and long established as an ancient practice amongst the most diverse and widely separated races of man.

The question arises. How came it that the virtues of burnt clay were known, and made use of by methods of extraordinary similarity, by groups of men separated from each other by vast distances of land or water and utterly unaware of the very existence of each other?

In the days when it was believed that man first appeared upon the earth some seven or eight thousand years ago, in a state of complete development, the presence everywhere of the primitive arts

such as stitching, cooking, archery, fire-making, pottery, etc., was accounted for by the theory that they were discovered by individuals when man was still in the "cradle of his race", wherever that may be supposed to have been, and made part of his outfit when he set forth from home to people the world.

But modern science now teaches that man's existence is not a matter of a few thousands of years, but of an unknown number of hundreds of thousands, and that he was already firmly planted in most parts of the world long before he had reached the high development implied by the possession of any implements, tools or arts at all. This makes the theory of discoveries or inventions by individuals, and subsequent distribution all over the world, practically untenable; for imagine a rather superior monkey in some Asiatic jungle, stumbling across a new way of cracking nuts, or the skulls of his rivals; what means are there by which such a great discovery could be communicated to, and adopted by monkeys in the forests of South America? The idea seems absurd! Yet man, when he first began to be man, was not far removed from a superior monkey or ape of to-day.

Modern Science meets this difficulty with the pronouncement that the theory of individual discovery is, in fact, exploded, and that it is now generally believed by the wise, that groups or communities of mankind were gradually, and more or less simultaneously evolved all over the world from their pre-human ancestors, and that the course of that evolution included the simultaneous discovery of the uses of, and the means to make, the primitive implements that are now to be found lying about on, or just below, the earth's surface in every country. But these implements, wherever found, are not only rather alike but are *exactly* alike. Paleolithic remains of man's handiwork found in America, Europe, Asia, and Africa are entirely similar in every respect, and Neolithic weapons, tools and implements, including pottery, collected from America, the Mediterranean shores and Madras are absolutely identical. Now one can conceive of the possibility that men in similar states of development and living under similar conditions might, quite independently of each other, invent implements having a considerable degree of resemblance; but that they should make

entirely similar objects in many places at one and the same time, and that these objects should continue identical through countless centuries, as improvements were thought of or circumstances compelled change, it is difficult to believe heartily. In fact, to many, this idea may seem almost as absurd as the other.

However, the things are there and must have had a beginning, and judging by the evidence that we have, Neolithic man must have been busy making, improving upon, and breaking, the pottery invented by his Paleolithic forebears, for some twenty thousand years or so before the earliest historical time.

It has, I believe, been established that Neolithic man inhabited Siam. And Neolithic man made pottery. In fact, Neolithic implements and remains of pottery have been found together in Kambodia. Hence we may with some confidence believe that pottery has been made in this country for a great if indefinite number of centuries.

There seems to be a tendency in this part of the world, when in doubt as to the origin of any art, legend, industry, agricultural product, &c, to say that it came from China, or if not, then from India; and in a monograph on pottery produced under Government auspices in Burma, the point is gravely discussed as to whether the art of making pottery was brought there from India or China, the verdict going finally in favour of China. One may acknowledge readily that many good things have come out of China and that, owing to the early advance of that country in arts and industries, the countries near her owe her a good deal of their enlightenment, but there appears to be no necessity for a belief that she had at any time a monopoly of primitive Neolithic crafts. I think we are amply justified in believing that the successive races that have occupied this country, at least since the first incursion of the tribes from which the Mon, Khmen, L'wa, &c, are descended, all brought an already ancient knowledge of pottery with them when they came here, and that they found an equally ancient knowledge existing amongst the aborigines they displaced.

The belief in the, so to speak, indigenous nature of the pottery industry in Siam is encouraged by the extraordinary prevalence of

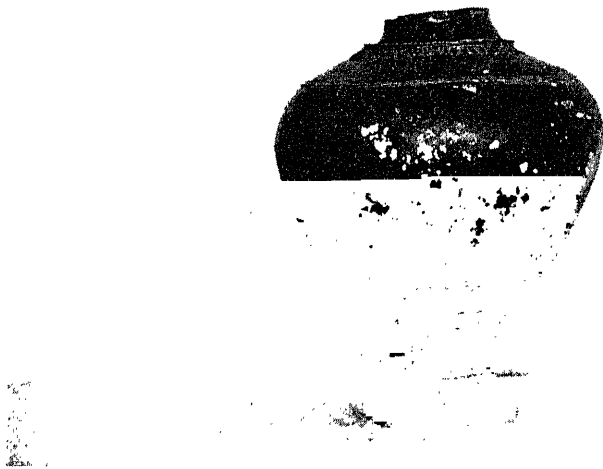
pieces of broken pot in practically all parts of the country. You have doubtless noticed, whenever you dig a hole in your garden, or whenever excavations are made for the building of a new house, bits of pot are turned up out of the earth. That is, of course, quite accountable, and to be expected in or near a great city like Bangkok, where a large population has been unceasingly occupied during the last hundred and forty years or so, in throwing away pieces of broken pot. But what about the shards that are continually coming to light in places where man has apparently never lived? What about the fact that when an eight- or ten-metre high river-bank caves in, revealing alluvial beds untold centuries old, pieces of pottery are frequently found sticking in even the lowest strata uncovered? What about the discoveries of railway constructors, miners and others, whose business it often is to dig in the ground in the wild and unfrequented parts of the country? The fact is that we walk about upon a surface-soil of which it may almost be said that quite an appreciable percentage is composed of fragments of pottery: fragments that may be twenty days or twenty centuries old; and when we come across those fragments in the jungle remote from man's habitation, we may feel justified in moralising upon the great age of the potter's craft. Not that we do so, however. Pieces of broken pot are so thickly sown over the earth's surface, we are so accustomed to seeing them, and one chip of earthenware is so very like another, that a fragment unearthed even in the most unlikely place, usually passes unnoticed, or at best raises no more than a vague speculation as to where the deuce it may have come from.

It is when specimens of pottery are found more or less entire, or bearing characteristics which may serve as some sort of indication as to their date, place of origin and the purpose to which they were put, that they begin to be of some interest, and such specimens must naturally be of comparatively recent origin. Probably the most ancient pottery known in Siam is that which has been found in the neighbourhood of the ancient Khmen ruins that are dotted about the Monthon of Korat and Ubon. From time to time people living near those ruins, dig up in their fields, jars of coarse earthenware, covered with a brown glaze and shaped with some attention to ornamentation as well as usefulness. These, being quite unlike the

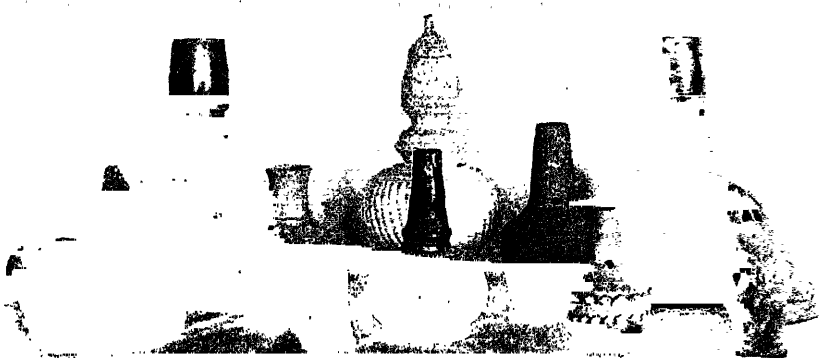
pottery used by the people, and of entirely unknown origin, are naturally looked upon with fear and suspicion, and are usually deposited at the nearest Wat, in order that any baleful magic lurking in them may be neutralised by the sanctity prevailing there, and prevented from harming the finder or his neighbours.

A few years ago I was shown half a dozen specimens of this ware at the Wat of Ban Kampeng village, on the road from Korat to Ubon. They were all between sixteen and twenty-four inches high, of very coarse texture but adorned with ornamental lines and circles, and of rather graceful shape. The brown glaze was cracking off, apparently because the earthenware beneath was rotting, and all the specimens were more or less broken. They had been found at different times below the surface of the earth, in fields near the ruins of an ancient stone wall of unknown history. Later I saw another collection in the possession of the Governor of Surindr, very much like the first lot, and found in the earth near the town of Surindr, which stands in the middle of ancient Khmen relics of all kinds; sanctuaries, aqueducts, reservoirs and so forth. I have here a specimen of this pottery which was found near a hamlet called Ban Prasart on the site of an ancient Khmen settlement in Changwad Kukan. The piece is unfortunately broken, the whole of the lip is missing, but enough is left to indicate that it was made by a person of some artistic perception. But though graceful of shape and somewhat elaborately ornamented, it must, even when undamaged, have had a rather rough appearance, and the other pieces I have seen are much the same in this respect. As regards its age there is no reason of which I am aware why it should not be coeval with the stone ruins near which it was found. I take it to be a relic of the ancient Khmen civilization, and therefore anything between 1000 and 1600 years old!

The period of Khmen culture passed away long ago and during succeeding centuries the darkness of poverty and ignorance gradually closed down on the people whom it had once enlightened. But its influences, long submerged, were, apparently never absolutely destroyed, at least on the plateau of Eastern Siam, for, under the modern encouragement of a paternal Government, the potter's art now re-



Ancient Khmer glazed earthenware.



Ancient tile, Phra-Pim, and terra-cotta votive offerings.
Also modern earthenware from Chiangmai.

appears, and the remote posterity of those who made this ancient earthenware, find means to express their artistic instinct in the peculiar whitish clay pottery, of Ubon. (Here was exhibited a terra-cotta statuette of a shepherd boy, the pedestal arranged as a cigar-ash tray and match-box holder!) One can perceive at a glance the extreme modernity of this latter work that I am able to give you the privilege of inspecting!

As I have suggested there is every reason to presume that at the period of this Khmen earthenware, and before, pottery of sorts was being made all over Siam. But unfortunately very little ware that can even vaguely be assigned to those early times has come to light. Here and there amongst the ruined cities of the North, the terra-cotta pedestal of a sacred image has been found, such as that described by Holt Hallett as seen by him near Penyow, south-east of Chiangmai, and now and again an old Phrachedi collapses and delivers up *Phra Pim* and other earthenware objects placed in it when it was built. Such things as these last, having been preserved from the action of the elements, may sometimes be dated (approximately) but of course the great mass of old earthenware has totally disappeared or has become mere unrecognisable fragments.

The impressed clay tablets known as *Phra Pim* deserve attention because amongst them very old specimens can be more or less identified. From early Buddhist times it was the custom for the pious to make offerings, at Phrachedi and other sacred spots, of these tablets, either baked into terra-cotta, or raw (green, is I believe, the potter's term), impressed with an effigy of the Buddha. Some years ago a large number of the unbaked kind was found on the floor of a cave at a place called Mat Harn in the Puket Monthon, and these, on being examined by experts, were pronounced, by virtue of certain characters stamped on them, to be not less than 900 years old. They had lain in the cave beneath a thick layer of dust and dirt and when found were quite fresh and even soft, but they soon cracked and crumbled after exposure to the air. There are, or were until lately, some of these tablets in the Museum at the Mahatai and a few are preserved in the British Museum. You are probably aware that the limestone hills of the Peninsula are full of caves, and many of them,

some even in the heart of what is now Malay and Mohanedan country, contain large and very ancient effigies of the Buddha. These caves were doubtless visited by countless pilgrims in ancient days, and votive tablets probably lie concealed in most of them.

Twenty five years ago when Archæology and antiquarian research were almost unknown in Siam, terra-cotta *Phra Pim* were quite common objects amongst the bricks and other débris of old and abandoned Wat. Most of them have now been picked up and placed in museums or in the custody of modern Wat, or are kept by the people as charms or in collections of antiquities. Fournereau in in "Le Siam Ancien" gives several illustrations of these, (Part I PL XXIII) and says that the smaller ones when found are worn as amulets.

When railway construction began in Siam, and for some years afterwards, it was the custom to demolish Phrachedi and Phra Prang near the line and to use the bricks as ballast. Some of the *Phra Pim* found in pagodas thus destroyed at Phra Pa Don near Nakon Patom, are quite possibly 1400 or 1500 years old. Fournereau's specimens, which came from Sawankalok and Sukotai, may be 700 or 800 years old.

Amongst the few *Phra Pim* that I have here, one is of ascertainable date as it was found at Ayuthia inside a Phrachedi that fell down a few years ago, this being one of the original constructions of the reign of Phra Chao U Thong; that is to say of the middle of the 14th century A. D. The specimen is well executed, the details having been carefully worked out. Evidently it was gilded when new. Moulds or dies from which *Phra Pim* were made have occasionally been found. Small quite modern *Phra Pim* made to order in China of variously coloured clays and imported for wear as amulets, can usually be bought in the bazaars.

Though it is the general impression that in old times the great majority of Siamese houses were roofed with grass, palm leaves or nippa (*chark*), yet the making of earthenware tiles must have been a considerable industry for, not only were palaces and Wat all roofed with tiles, but we learn from Van Vliet who described the

Ayuthia of 1630, that the houses of the official and better classes generally, were tiled, while "the common or poor people live very poorly in reed and bamboo houses, the roofs covered with *cocos* leaves or bad tiles." Hence it would seem that, in the capital at any rate, the demand for tiles must have been considerable.

According to Fournereau, "Les tuiles etaient de differentes sortes: plates et rectangulaires avec crochet, plates et arrondies a la partie inferieure, enfin concaves et convexes comme chez les Romains." He might have added "et comme chez les Chinois aussi," for concave and convex tiles, laid alternately, are a feature of the most ancient Chinese buildings. Many old Wat with concave and convex tiles are still to be seen in Siam and here and there can be found specimens of the peculiar and effective ornamentation arrived at by turning up the end of the lowest convex tile of a course, and impressing on that end the figure of a *Dévada*, angel or other design. I am fortunately able to show you a specimen of such earthenware, which entitles the otherwise humble tile to some slight consideration amongst the artistic productions of the potter.

Fournereau goes on to say that the old time tile was usually covered with yellow, green, blue, grey or white glaze, but here I think the learned gentleman has been led away by the beautiful coloured tiles he saw in Bangkok, has jumped to a conclusion, and taken a fall. For I can find no reference to any coloured tiles being used for the buildings of old Ayuthia or earlier. I have never seen any such on really old buildings, and my Siamese friends tell me they are, in fact, modern. Old Van Vliet, who mentioned tiles no less than seven times in his account of Ayuthia, says that the rooves of all palaces, Wat and tiled houses were red, that is, simply the colour of burnt clay. The variegated tiles which beautify so many buildings in Bangkok, were apparently an innovation of the early 19th century and came from China. They are now made in Bangkok by a Chinese Syndicate on the west side of the river at Bang Chark.

Writing of Pattani in 1744 Alex: Hamilton says "At the present day it carries on a small trade with Bangkok, Singapore and neighbouring States, the exports being tin, lead, gutta, fish, tiles and earthenware."

The tiles referred to here would doubtless be those curious, thin, light little squares known here to-day as *Krabuang Sóngkla*, or tiles of Singora which, at least until the arrival of the modern cement tile, were imported into Bangkok regularly.

Once upon a time a Government ship was despatched down the peninsular coast on a delicate mission not unconnected with the Malay Dependencies. There was a strong body of stout marines on board and also a Subtle Emissary with a persuasive tongue and guileful heart. (This was, of course, a long time ago). In due course the mission was successfully accomplished and the ship prepared to return. It happened that a high official connected with the expedition was building a new house in Bangkok at the time and, as it seemed to him unsafe for a fine Government ship to be going about practically empty, he arranged to have her ballasted with Singora tiles. (This was, I say, a very long time ago). The ship set out crammed simply *full* of ballast, met with rough weather and, though this was a very, very long time ago, neither ship nor stout marines nor guileful emissary have ever been heard of since!

In the museum at Ayuthia where, under the fostering care of H. E. Phaya Boran Rajdhanindr, one of the most learned archæologists of Siam, a very valuable collection of old pottery has been got together, there are many specimens of common earthenware of variable quality and design, that have been found amongst the ruins of that city and in the neighbourhood, and that are all at least 150 years old. Some are very rough in texture and workmanship, and others are of fine clay, carefully executed and of graceful design. None of the articles are quite similar to the earthenware pots of to-day though the differences are in many instances small.

In the Museums of Bangkok and Ayuthia are preserved specimens of the large earthenware pipes made by Faulkon to conduct the water from the sacred lake, Chub Sorn, to the Palace at Lopburi.

The Bangkok and Ayuthia Museums also contain good examples of the large jars for which Nakon Sawan was at one time locally famous, jars with a small mouth, a pronounced lip, very wide and

rather squat body and narrow foot; of content about four times that of the large water jars now made at Pakret, with which everybody in Bangkok is familiar. The specimen at Ayuthia has a thin glaze which, however, covers only the upper half of the jar. Those in Bangkok have a much thicker and more complete glaze and are in fact very remarkable pieces of earthenware. These large Nakon Sawan jars are not made now though pottery works persist there.

Concerning the alms-bowl of the mendicant Buddhist monk, called "Bhatr", (from the Sanscrit "Patra", a plate or cup). My youth was spent in a part of Burma where alms-bowls are made of hard pottery, turned a shining black by a coating of sessamum oil applied before firing in the kiln. When therefore, I began this paper, I went to that part of Bangkok that is called "Ban Bhatr" because alms-bowls are made there, to study the local process. I was told then that these articles are made here of iron, and it shocked me to realise that for twenty-five years I have been going about in blind ignorance of that fact. However, a man, seeing my concern, produced an old alms-bowl of pottery, and I went away thinking that these iron bowls might be a mere modern innovation. But, on looking up De La Loubère who wrote of things in Siam about 1680, I read; "When they (the monks) go in search of food they carry a bowl of iron in which to receive whatever may be given them"! I have, however, seen several old pottery alms bowls at Ayuthia, and so may perhaps conclude that "Bhatr" may be of either material. I am told that in the Chiang Mai neighbourhood also, where fine black pottery is made, the "Bhatr" is usually of iron but that many old earthenware bowls are preserved in Wat, and that once upon a time they were all of this material. (A black terra-cotta alms bowl was exhibited).

All over the country amongst the paper, plaster and wooden, votive offerings made at San Chao and similar shrines, the curious will find small baked clay images of one sort or another that have been presented by the pious in search of, or in acknowledgement of, spiritual assistance. These scraps of pottery are, some of them, quite interesting, though almost always of very rough material and careless execution. They are about on the same level as the little earthenware toys that are common and can be seen on sale in most

bazaars. I once picked up two of them near a ruined shrine at Sawankalok, and I like to think these may be of extreme antiquity, though probably they are not so at all. One represents an elephant in the attitude of adoration and the other is apparently a child with mumps, wearing anklets and a top-knot and holding a bantam cock in its lap. Perhaps some-body can explain any significance there may be about the latter. The mumps may be a potter's accident but the other things are apparently intentional.

Of the innumerable places where pottery of sorts is made in Siam to-day, the most noteworthy, after Bangkok, are Chiang Mai and neighbourhood, Nakon Sawan, Ayuthia, Bang Bua Tong Pakret, Pattani, Ubon and Chantabun. In all these places one may see potters working by the methods, and with the implements, that are common to the business all over the world. The kneading and mixing of the clay, a laborious and important process, the throwing on the wheel, the beating of the green pot to the required thinness and shape, the impressing of the ornamental pattern, the firing and the final rubbing, scraping, and polishing off; all these operations are performed in a manner practically identical with those of the potters of Europe, America, everywhere.

I don't want to take you back to the beginning of time,—of which you have already had enough,—but really! The Potter's Wheel!! One must look back for a moment to consider that stupendous fact. It is a matter of record that in Egypt 3500 years ago and in China 4000 years ago, clay was being spun on wheels in all respects identical with those that may be seen to-day in any pottery-works of Stafford-shire, beside the Seine, the Rhine and the Tiber, and on the banks of the Menam Chao Phaya. Drawings of potters at work have been preserved for us from the ancient civilization of Egypt, which might almost have been copied from 20th century workers in Siam. There is the wheel in the shape of an inverted cone, turned with the foot as by Chinese potters at Bang Chark in Bangkok, or with the hands as by the Siamese at Pakret and elsewhere. It is a wonderful phenomenon!

Right here in Bangkok one may watch the wet clay rise on the wheel under the deft fingers of the operator, who passes it to

another by whom it is whacked and thumped to the required thinness and smoothness before being fired; and one will not forget that 800 years ago a bibulous old tent-maker of Khorassan stopped by the way to watch that very same operation and wove the incident into an immortal quatrain.

The potteries of Chieng Mai are extensive and peculiar. In addition to the places where the ordinary rice-pots, water-jars and bowls of daily use are made, there is quite an industry concerned with the making of a fine porous terra-cotta ware, examples of which, in the shape of water—bottles, small jars, filters and so forth are now-a-days distributed all over the country by means of the railways. There is also a long-established factory which turns out a special grey-green earthenware of roughish clay, burnt very hard and covered with a green glaze. This institution is situated not far from the Pradoo Chang Peuak and is owned by a Shan family in whose hands it has been for some generations. The clay is dug from a deep hole right on the spot. The owner is an affable person who takes pleasure in showing his premises, but on the subject of his glaze he maintains a silence as of one who holds a secret that nothing shall induce him to reveal. In Scotts' Upper Burma Gazetteer we may read, however, of a substance used for glazing pottery in the Southern Shan States; a substance, yellow in colour and containing 90·8 per cent of a lead compound, which, mixed with rice-water to a viscid fluid consistency, and smeared, with a little blue-stone added, over earthenware, gives, on firing, a vitreous green glaze. After reading this, it scarcely seems necessary to worry the Shan potter of Chieng Mai about his ancestral secret. This pottery is fired at a fairly high temperature and the glaze is certainly much the best being produced anywhere in Siam at the present day.

Small terra-cotta bottles or vases of many degrees of fineness, are another production of Chieng Mai. I once asked two or three friends from the north what these were for, and they replied that they are generally used for containing the water required for the mixing of gin and bitters! I found it difficult to believe that the short-drink vice had reached such proportions in the north, the evidence of my European informants notwithstanding, and I preferred to believe that they are really intended for use as flower hold-

ers and for the ordinary innocuous requirements of the Lao household.

The potteries at Nakon Sawan and Ayuthia produce nothing in these times that is particularly worthy of special notice, though they turn out plenty of ordinary ware. Those of Ayuthia are situated at the suburban village of Sa : Bua where they flourished during the palmy days of the old capital, and it is interesting to note that many families of the present colonies of potters at Pakret and at Ban Tanao Sri on the river a few miles north of Bangkok, emigrated from Sa : Bua about 130 years ago, presumably in order to supply pots for the new capital.

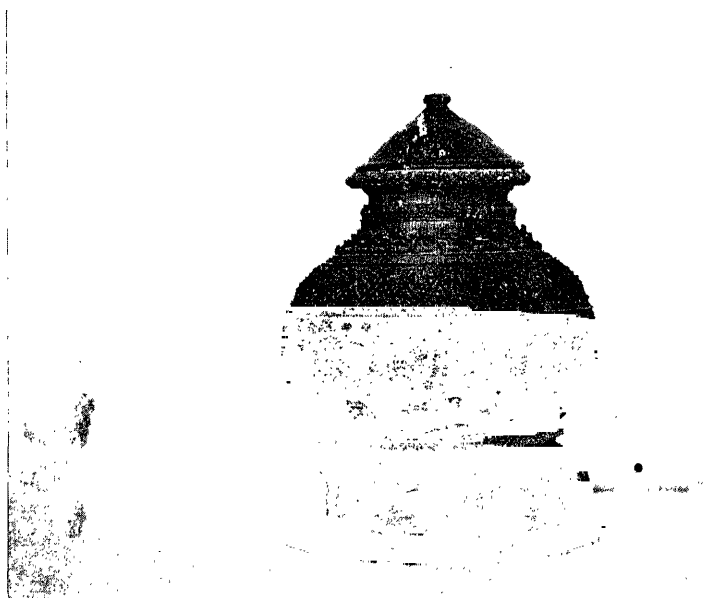
The ware of Pakret and neighbourhood is too well known to need description. It consists largely of the big water-jars in which before the days of condensers, artesian wells and water-works, we used to store water collected in the wet season for use during the dry. I remember about a hundred of them standing in the space under the British Legation ! Also in those unsophisticated times, one of them, with a ladle or dipper, formed the sole appliance for the bath.

The Pakret pottery being usually thick, requires more firing than most and, to make the utmost of the heat, oval topped kilns are used, whereas for ordinary pottery the kilns are square and quite open at the top.

At Bang Bua Tong in the South of Monthon Ayuthia, west of the river, where the clay is good, there are several villages devoted to the making of pottery. Here are two enlarged photographs from a factory there belonging to H. E. Phya Sukkum, who specialises in the ordinary cooking pot. I ask you to admire the ordinary cooking pot :—Simple, elegant, thumped to the *nth* degree of hardness and thinness, it is rather a wonderful production ; but it is so cheap and common that it is never noticed. Besides its legitimate purpose which is to cook rice, it is put to many household uses. Half a dozen unused pots stand on a shelf in every house and serve as money-box, larder, wardro'e and a cache for odds and ends, and, when smallpox and cholera are about, an old pot makes an excellent boggle to frighten away the wicked, "phi," from the housedoor. (Here was shown a fire-blackened pot with



Red earthenware cooking apparatus (Bang Bua Tong).



Red earthenware water-pot (Ban Tanao Si).

a grotesque face drawn upon its bottom with white lime). The Siamese potters of Ban Tanao Sri, Bang Bua Tong and elsewhere are always ready to undertake special orders in addition to their regular business and, under guidance, are capable of quite artistic work.

The pottery of the peninsular districts is neither very good nor remarkable. There is here a specimen curry pot obtained in the far interior of Pattani from a small and very primitive factory. Pots of similar shape are to be found at Ayuthia and elsewhere but they are all of better make and material. Such pots are not thrown on a wheel but are laboriously worked by hand. There is much sand in the clay and the firing is poor.

In Bangkok of late years a good deal of pottery making has been undertaken by Chinese. The largest factory at Bang Chark on the west bank of the river has already been mentioned. Here many sorts of flower-pots and stands, bowls, tiles and other objects intended to be ornamental, are made, but few ordinary household utensils. Other Chinese factories are smaller and are usually devoted to the making of one particular thing. The earth is brought from various places, chiefly from Bang Bua Tong, whence also supplies are carried to many distant Siamese potteries. A good clay is brought all the way from Lampang for special uses and a remarkably fine dark clay, the origin of which is kept secret, is also used. Many productions are glazed and coloured with material that is all imported from China, Coloured tiles, a specialty, have been noticed.

The potter's trade in Siam is not very lucrative. The wholesale prices obtained are very small, from 3 to 5 ticals per 100 for rice pots, and Tes. 6/- per 100 for larger pots used for collecting palm-sugar juice and so forth, being usual. The large water jars of Pakret are sold wholesale at 45-50 stgs.

Nevertheless Siamese potters seem able to make a profit which, when eked out with a garden or a little rice-land, provides them with an income sufficient to induce them to continue working contentedly at the business. As for the Chinese potters of Bangkok; when they are asked How is business? They, of course, always reply "*Kat Thun*" which, in this, connection, means "Rotten."

II

I pass now to the consideration of what is usually called the higher form of the potter's art, namely of the vitrified clays, the highest development of which is porcelain; but before doing so, it appears desirable to consider very shortly the development of Kera-mics in China, whence vitrified clays and porcelain came to Siam.

According to Bushell, a well-known authority, to Burton and to others, the Chinese were the first potters in the world to discover the art of glazing pottery with powdered felspathic rock and lime-stone, under the influence of very high temperature. This was during the Han dynasty and consequently some time between 206 B. C. and 220 A. D. From this discovery porcelain resulted, the productions of the industry passing, during centuries of unremitting experiment in the mixing, refining and firing of various clays and powdered stone, from simple terra-cotta, through many stages of more or less vitrified stoneware, with glazes of ever-increasing refinement of substance and colour, to a highly vitrified, translucent, white ware covered by a white glaze, which made its first appearance in the 12th century A. D., or near the end of the Sung dynasty.

The word porcelain, it may be remarked, is not derived from Chinese but from the Portuguese word "porcellana", which literally means, "of, or pertaining to, a little pig." Cowrie shells were called "Porcella" or "little pigs" because of a fancied likeness of their polished surface to the round back of a piglet; the resemblance between white China-ware and cowrie shell struck the European mind at once and hence the name for the latter was extended to the former. In Chinese, earthenware is "Yao" and porcelain, "Tchéki", according to Père Entrecolles. (*Lettres Edifiantes et Curieuses des Missions Etrangères*. Vol. 18, page 236).

The earliest attempts to colour porcelain by painting as distinguished from the fine colours obtained in the glaze, were made in the 14th century A.D., when blue and red under the glaze were first produced, and it was not until near the end of the 16th century that the use of enamel colours fired over the glaze was introduced.

Sawankalok and Sukhotai were once the alternate capitals of old Siam, and in the neighbourhood of the ruins of both these cities

there are situated the very numerous remains of ancient Pottery works, which were, once upon a time, devoted to the manufacture of a pottery quite unlike the ordinary earthenware to be found elsewhere in the country. These remains have been described by Prince Damrong, by Gerini, Lyle and others, and referred to by the learned Dr. Hansen in a recent paper read before this Society, and have doubtless been seen by many of you, and therefore a minute description of their present appearance is unnecessary now. Suffice it to say that they consist of an immense number of small kilns surrounded by heaps of broken or mis-shapen pots, bowls, bottles, dishes, etc., of peculiar shape and material, evidently the accumulation of failures thrown away on opening the kilns after firing.

On examining this débris it is found to contain pieces of a ware made of exceedingly fine clay, very pale grey or almost white, burnt to the consistency of stoneware, that is, slightly vitrified, and overlaid with a thick, transparent greenish, blueish, greyish or brownish glaze. Parts of the clay that have been exposed to the firing uncovered by the applied glaze, are usually light brown and slightly glazed by vitrification of the clay itself. The Kilns are lined with bricks, the surfaces of which are found to be highly glazed by fusion of the sand contained in them. In fact, it is plain that here are the remains of potteries where much ware has been made by the very-high-temperature method; indeed, a kind of primitive porcelain.

In the "Pongsawadan Muang Nua", or Annals of the North, there is an account of an expedition of the Siamese King Phra Ruang to the Court of China, (the details of which are evidently mythical), ending with a reference to certain Chinese potters brought thence on the return journey and installed near Sawankalok to make pottery. Whether or not there is a substratum of truth in this legend, there appears no room for doubt that in the palmy days of Sawankalok and Sukhotai there were people there who made pottery by the Chinese method, and who were in all probability Chinese themselves. Moreover, there is nothing repugnant in the idea that such Chinese potters may really have been placed there by Phra Ruang, who seems to have been the

greatest, proudest, most ambitious and, as one might say, most swanky king of the Sawankalok era and therefore might be expected to feel that, as the Emperors of China had their royal pottery factories at Pien-Chow and Hang-Chow, so he (Phra Ruang) must have his own at or near his capital.

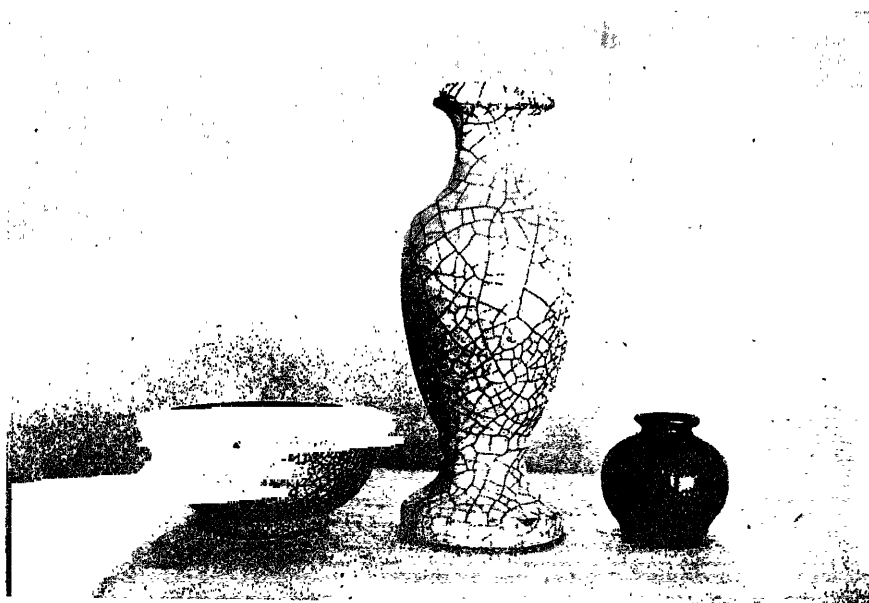
The date of Phra Ruang's reign is disputed, but must have been somewhere between the 10th and 13th centuries A. D.; or while the Sung dynasty potters of China were working through the stone-ware stages towards porcelain, with single glazes of various colours but with no knowledge of painting. Looking at the spoilt remains of the Sawankalok and Sukhotai potteries that we have, I see no reason to suppose that the best these Sawankalok people could produce, was much, if at all, inferior to contemporary Sung productions in China, and I venture to express the opinion that if we could see the failures that the Pien-Chow and Hang-Chow potters threw away, we should find them very much the same sort of stuff as this.

But—It would seem that, while the multitudinous potters of China vied constantly with each other in improving their wares, the two or three potteries isolated in Siam must have got left behind. Gerini says somewhere that the glazes used at Sawankalok were probably imported from China, but evidence of this does not appear, and I see no reason to suppose either that the potters who came to Siam could not make glaze, or that they could not find the materials for it here. It seems to me probable that they knew their job and that they worked away for a few generations with such material as they found at hand, possibly improving slightly, and then, as they became more Siamese and less Chinese, falling slowly back. They never produced true porcelain because they never had the requisite pure white clay to mix with their felspathic powdered rock, whereas if they imported glazes they might equally well have imported Kao Lin and so kept abreast of the times.

About 1370 A. D. the Chinese, under the earliest Ming Emperor, were producing vastly improved pottery, and were beginning to make porcelain painted with blue under the glaze. By the end of the 14th Century this blue porcelain probably found



Sawankalok Pottery.



Chinese Crackle ! (Sawankalok Chin).

its way to Siam. Though Ayuthia had by then been founded, Sawankalok was still an important place and the potteries there would be still going fairly strong. The rough attempts to produce colour under the glaze that appear in some Sawankalok ware may perhaps be allocated to that period. There are in both the Ayuthia and Bangkok museums, plates of, I think, unmistakable Sawankalok origin, with very rough under-glaze blue painting, and there are many specimens with more or less badly executed designs in brown or black lines under the glaze. That seems to be about as far as the Sawankalok-Sukhotai potters ever got. From then on they seem to have declined gradually, falling from the status of 'Purveyors to Royalty' to that of makers of inferior cheap crockery, until, before the rising tide of imports from China, they faded away altogether; some people think in the 16th century A.D., others in the 18th.

That the ware of Sawankalok-Sukhotai ever contributed seriously to the famous export of glazed pottery and porcelain from Martaban to the Mohamedan countries of the Levant, as is claimed by some, seems to me highly improbable. That trade was most active in the 16th and 17th centuries, and if, at that time, Sawankalok could produce of ware good enough in quality and large enough in quantity to compete in that trade, we should almost certainly have had fairly numerous specimens still in existence to-day; whereas the remains of the industry are little more than mere fragments such as you see here.

The learned and indefatigable Phaya Boran has managed, during 20 years, to collect about 150 pieces of Sawankalok ware in the Ayuthia museum, a few intact but most flawed or damaged, and only one fit to compare with the celebrated Martabani ware,—and that one may be Chinese. The evidence all seems to point to the probability that Martaban, and perhaps Ayuthia, were no more than ports of transshipment for porcelain consigned from China to the West.

The collector of pottery in Bangkok may sometimes be surprised to find that a piece of grey crackled ware offered him as Sawankalok is, on further investigation defined as *Sawankalok*.

Muang Chin (Chinese Sawankalok)! It seems that a few years ago anything grey, or pale green, and crackled, had to be called Sawankalok to please collectors, and from this the more ignorant persons connected with the traffic in porcelain and its semblances, both as buyers and sellers, seem to have concluded that Sawankalok was, in fact, the generic term for all crackled ware, some being Chinese Sawankalok and some Siamese Sawankalok!

I have never seen any Siamese ware that resembled Chinese Crackle in any but the most superficial way.

With the introduction of true porcelain from China it would appear that descendants of King Phra Ruang abandoned the idea of having their own Royal Potteries and took to using these superior white Chinese wares. With the development of the great King-te-Cheng works, the output of Chinese pottery increased very much, and early in the 16th century it was being exported, not only to all neighbouring countries, but to Europe. We know from the reports of early travellers, that much of this ware came to Ayuthia, and no doubt, before the century was ended, not only the Royal Court but the nobility, and possibly even the common people, habitually drank tea out of Ming cups. In the time of Wan-li, the last of the Mings, the output of Chinese porcelain was enormous and, though Ming ware is not exactly common here now, there is probably a good deal more of it in existence in this country than people think.

Anderson, in his *English Intercourse with Siam* in the 17th century, page 30, quotes Ramusio, a Portuguese writer of about 1550 A. D., as saying that the merchants of Surat traded with Tenasserim (practically the same thing as Mergui, Maulmein or Martaban) in spices, silk, benzoin and porcelain; and again William Methold, an East India Co.'s factor, wrote in 1619 that the merchants of Golconda carried goods to Tenasserim and thence overland, 14 days, to Siam (Ayuthia), returning with all sorts of Chinese commodities, as "porcelain, satin, beniamin of Kambodia, tin, and sappan wood."

The above is evidence of the presence of Ming porcelain in Siam, and much more could be produced if time allowed and the mere recapitulation of evidence were less tedious.

To clinch the matter I exhibit a piece of Ming found in Siam. Observe the colouring and design! Obviously Ming period! See the glaze, worn dull where exposed but still bright inside! Clear evidence of great age! The article is a narghile, hukha, hubble-bubble or water-pipe: a thing not used in China but without which no orthodox Persian, Turk, Egyptian or Arab can exist. Hence an article made for the Levant trade. Detained in Siam, however, probably by some Moslem smoker, it has passed from his descendants to non-hukha smokers who have cut off the spout, plugged the hole and made the thing into a bottle.

It may have been about the end of the Ming period that the Court of Siam first began to send designs, both of shapes and ornamentations, to be carried out in porcelain in China; but this is more or less conjecture on my part as there are no quite authentic specimens of such Ming ware extant, while of written evidence of the fact, I know none. Regarding the 17th century, however, one feels rather more confident, for the ruins of Ayuthia have yielded rice-bowls, covered waterpots, dishes and little cinerary urns, Siamese in design and shape, which seem to be not later than the Kang Hè (Tsing) Chinese period 1662-1722. Here, also, H.R.H. Prince Damrong comes to the rescue. His book, 'a History of Chinese Porcelain', published in 2460, i. e. about four years ago, a most excellent, learned, and comprehensive work, deals at length with Siam-Chinese ware and is a reservoir of valuable information from which, were I able to read Siamese with less trouble than is the case, I should have been happy to give you extracts.

I have been privileged to see pieces of blue under the glaze and of enamelled polychrome porcelain, undoubtedly of Siamese design, the owners of which can trace their (the porcelain's) history back beyond the 18th century, and I have compared these with companion pieces found at Ayuthia in situations that show them considerably anterior to the last Burmese invasion. I cannot show those pieces here because they are too precious to be carried about. An enamel bowl is especially remarkable for the excellence of the workmanship. The design consists of four effigies of Kinari Ram, i. e., dancing beings, half bird, half

woman, of Siamese legend; surrounded by floral wreaths on a red ground, the whole outside of the bowl being covered with enamel. The inside is enamelled with diaper pattern in the same colours as the outside. A covered pot (Toh) for holding perfume is even more remarkable in that it is apparently the beautiful prototype of the not so beautiful Thépānom ware of which I will speak in one minute.

The nearest things to the above described ancient and beautiful work that I am able to produce for your inspection are, a bowl enamelled outside and on the bottom of the inside, which, I believe, can be known by its red base as belonging to the 17th century; a little dish and a saucer.

I come now to the peculiar ware distinguished by the effigies of Nora Singh, mythical beings half man half beast, and Thépānom, or praying angels surrounded by conventional clouds on a black, blue, purple or sometimes white enamel ground. The inside of the rice-bowls of this ware is green with a pink open lotus in the centre. The outside design has much in common with the ancient and celebrated *Tom* Siamese silver ware. The earliest of this porcelain apparently dates back to the last Kings of Ayuthia and it seems to have been the favourite ware down to the first reign of the present dynasty. It is said to have been painted at Canton and the very best of it is clearly in decadent imitation of the beautiful ware of which the covered pot above alluded to is one of the few surviving examples.

There must have been a very great deal of it made for, 30 years or so ago, it had almost no price and crowded the shelves of pawnshops. I myself once saw a large cratefull of these rice-bowls sold to a German for export at 3 salungs each. The ware is still fairly common in pawnshops but is now much more expensive than it used to be.

Other designs were used at the same period as the Thépānom, the colours being in accordance with the well known 'Five colour' style called in Siamese, 'Bencharong'. Lotus designs are found, bowls being painted to look like open lotus flowers or covered with



Siamo-Chinese enamelled porcelain early 18th century.



Siamo-Chinese porcelain 19th century.



Siamo-Chinese enamelled porcelain (inferior quality)
Late 18th and early 19th century. |

different coloured panels each of which bears a spray of the five sacred flowers which grow in the seven lakes of Himaphan (fairy land). Apparently the best of this old ware was reserved by sumptuary laws for the use of those of royal blood ; that available for the ordinary official class and the gentry being of inferior execution and somewhat different design. These last were never green inside. The peasantry and lower orders generally use imported crockery of ordinary Chinese make.

Thépanom ware gradually changed its appearance and, seemingly, after the 1st reign of the present dynasty, the best of it was no longer reserved for royalty. It continued to be made and imported, however, through all the subsequent reigns and, latterly, Japanese imitations of the oldest styles have been put on the market.

In the Second Reign the royal green tended to disappear from the best ware. This was the time of a vigorous production in China, of exceedingly beautiful porcelain, especially rice-bowls, and these last doubtless took the Siamese fancy, for a fashion set in then of patterns with birds and flowers, butterflies and flowers, or just simply flowers, and also very effective diaper and one-colour designs. This fashion amounted practically to a return to the pre-Thépanom manner and there can be no doubt that from the aesthetic point of view it was superior to that to which it succeeded. An immense quantity of such wares was made at King-Te-Cheng and imported, the sumptuary laws reserving the use of gold ornamentation for articles supplied for persons of royal blood. In the best rice-bowls the outside centre of the cover was adorned with an open lotus flower. It is curious that green-inside cuspidors seem to have appeared for the first time in this reign.

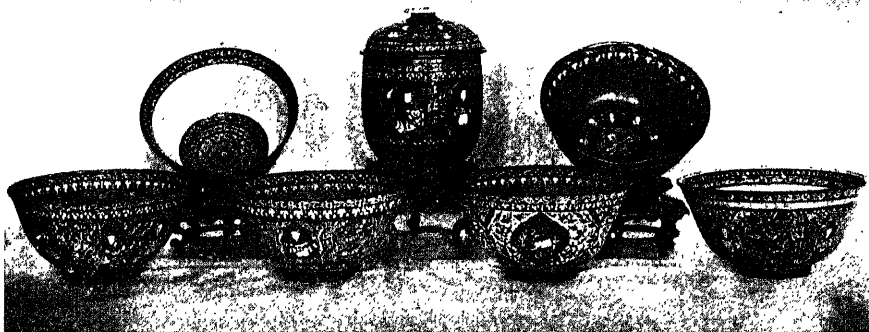
Apparently there was never much desire on the part of Siamese to have vases or other purely ornamental pieces made after their own peculiar designs. From the first the ordering of porcelain from China seems to have been simply a question of obtaining articles for daily household use, of as pleasing an appearance as possible. For ornamental purposes solely, Chinese designs were accepted.

The Third Reign synchronised with the Tao Kuang period in China, a period of continued activity in porcelain making, though the zenith as regards excellence of quality, in painting if not in the substance of the porcelain, had been passed. H. M. Phra Nang Klao, of Siam, seems to have been a true artist, and some of the porcelain imported by his orders is as good as anything of the kind to be seen. But the imports of the nobility and gentry at this time show a decline.

In the Fourth Reign the first symptoms appeared of a tendency to the use of European porcelain, and from this time the rapid decline of Siamo-Chinese porcelain may truly be dated. King Rama IV was a student of European ways and manners and was the pioneer of their introduction into his country. The Copeland and Garrett and the Wedgwood porcelain that he ordered from England instead of getting articles from China, is still preserved in various parts of the country.

With the Fifth Reign the manufacture of Siamo-Chinese porcelain may be said practically to have come to an end. The royal household was now supplied chiefly from Europe and in obedience to the dictates of the royal inclination, the national taste underwent a great change. In the earlier part of the reign the country may be said to have followed after false gods in matters artistic and, hypnotised by the glamour of Western Culture, to have forgotten its highly distinctive and sometimes beautiful national productions, in a rapt contemplation of the monstrosities of middle 19th century Europe.

King Rama V, however, outgrew his youthful bedazzlement by the West and cultivated a fine taste in true Chinese ornamental porcelain, a fashion for which consequently set in, giving an impetus to the importation of superior Chinese ware, and resulting in the formation of several fine collections of the same. Being also at heart an ardent lover of all things Siamese, the King, in his later years, introduced the science of archaeology to the knowledge of his people and, resulting therefrom, there dawned upon their imagination the fact that Siamo-Chinese ware of the first three reigns and



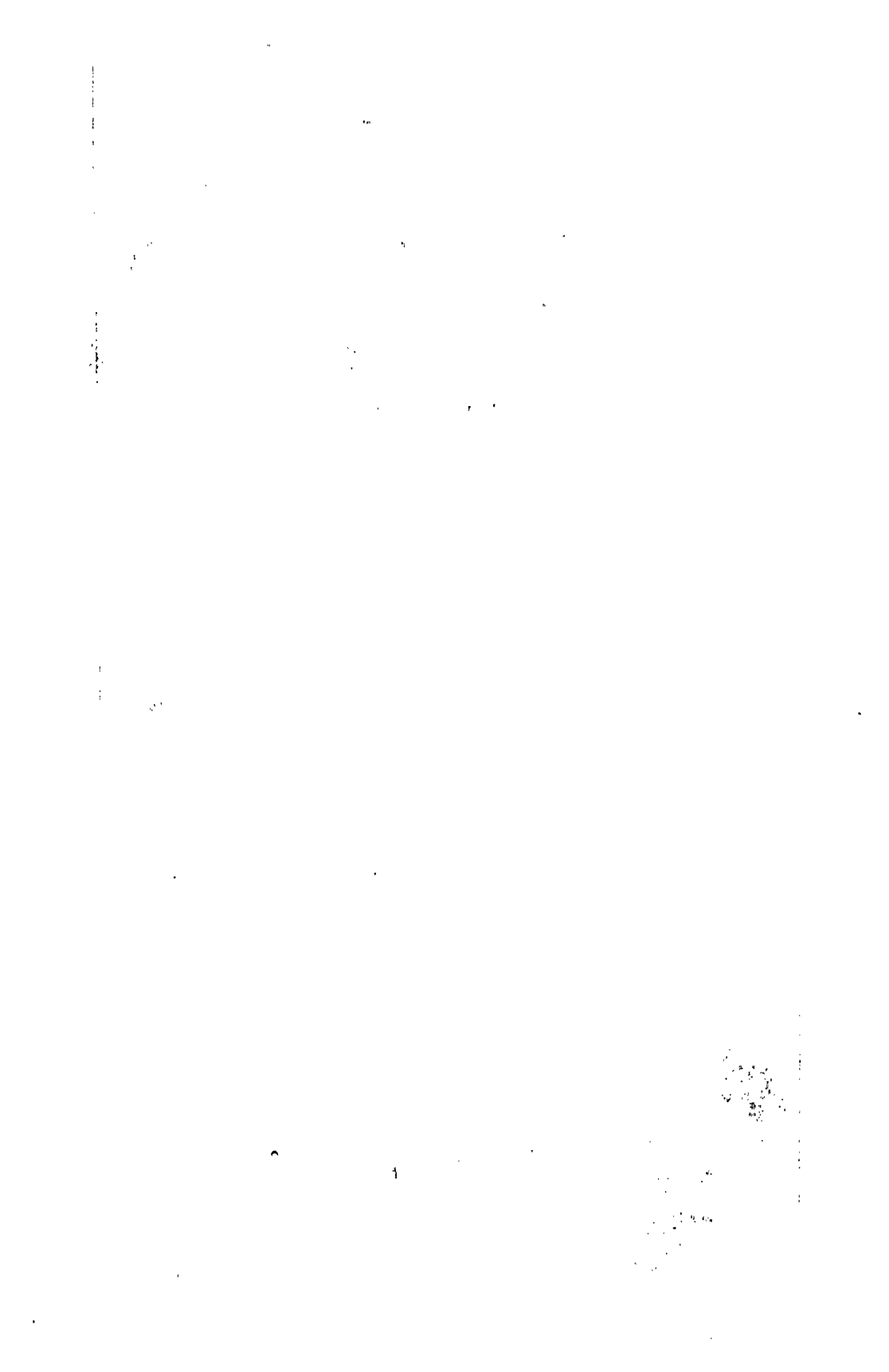
Siamo-Chinese enamelled porcelain (superior quality)
Late 18th and early 19th centuries.



Siamo-Chinese enamelled porcelain Rice-bowls (left to right)
1st, 2nd and 3rd reigns of present Dynasty.



Siamo-Chinese enamelled porcelain Rice-bowls (left to right)
4th, 5th and 6th reigns of present Dynasty.



earlier, though originally made for purely utilitarian purposes, was, much of it, very interesting as well as, sometimes, beautiful. A cult of this old ware thereupon took root and grew until it became a craze. Stacks of bowls and dishes, covered with the dust of years, were produced from cupboards and odd corners where they had long stood disregarded and forgotten, and were snapped up by collectors at prices that have increased until they have become prohibitive except to the rich. There are now some very complete collections of Siamo-Chinese porcelain in Bangkok, but as articles of use in high places the ware tends to disappear; the art of making it is in course of being forgotten and the trade in it is in the throes of death.

Ever since the making of Siamo-Chinese porcelain began, there has been a constant succession of blue under the glaze articles of Siamese design supplied to the order to the Royal Family and of the nobility and, latterly at any rate, for the public market without special order.

Efforts were made during the Fifth Reign to paint porcelain in Siam, not for sale but more for amusement. There was at one time a small workshop in the Wang Na, where quite good work was done, under the auspices of the last, so-called, Second King; and the late Prince Divakorn also employed artists who produced for him some pretty little cups and saucers, bowls, &c., The porcelain was mostly imported from China but a little was actually made in the Wang Na. These articles are somewhat sought after now but as few were made they are not often to be found.

As of yore, the common people use today the rough cheap Chinese crockery of the period, the flow of which into the country continues unabated. Such crockery includes cuspidors (*Kratorn*) and dishes (*Cham Cheuang*) of Siamese shape.

May I draw your attention for a moment to these small articles, called "*Pi*"? They are porcelain made in China for Siam and therefore come within the scope of this paper.

A few years ago I saw in a book-sellers' list, a book advertised for sale as "*Ramsays Siamese Porcelain*"; for 5s. Being at that time

unaware that there exists no book in European writing devoted solely to the subject of Siamese porcelain, and being at the same time anxious to learn, I sent the necessary five shillings, and received, to my grave disappointment, a small publication, a simple catalogue, called "Ramsays Siamese Porcelain and other Tokens"; containing some 350 illustrations of these strange and insignificant looking little objects. I then found that quite a cult of "*Pi*" exists; that German students have raged furiously together over them and that the discovery of a new one is the signal for palpitations of the heart in certain learned circles. "*Pi*" are the tokens that the gambling farmers of former days were allowed to issue to their clients in place of coin of the realm. Originally intended for the convenience of gamblers when playing, they naturally came into use as small change in the markets and shops. They were first used about 1760 and by 1875 they had, by the abuses and misuses that accompanied them, become such a source of worry and loss to the State that they were prohibited in the latter year. And why Messrs. Haas, Hanel, Schlegel, Chevillard and Ramsay should get so excited about them, is one of those things that are so difficult for ordinary people to understand.

A few words in conclusion about the brown, purplish or reddish, polished teapots with metal mounts that are to be seen in every Siamese house. These are called *Hpan* in Siamese and they are made at a place called Sin Hoe Tek, some four days journey into the interior from Shanghai in China. They are not composed of natural clay or earth, as would at first sight appear, but of hard rock, ground into fine powder and formed into an artificial earth after the manner of porcelain clay. They are imported into Siam in great numbers in a rough unfinished condition and the polishing and mounting of them constitutes an established minor industry in Bangkok, located chiefly near the Swing (Sao Ching Cha).

The process of polishing begins with the grinding or filing of the surface of the pot with a substance composed of powdered spinel or inferior sapphire, mixed with melted stielac and set hard. Several such files, of increasing fineness, are used in succession, until a perfectly smooth surface is obtained to which an infinitely thin covering of stielac adheres. The grinding or filing implement is called "*Khahk*

Bejra" which, I believe, means "Refuse or Dust, of Gems". The words, as pronounced, sound like K-a-k P-e-t but you will of course understand that, to be consistent with the accepted system of transliteration of Siamese words, I have spelt them K-h-a-h-k B-c-j-r-a. The final polishing is done by rubbing with the hard outside surface of a bamboo.

An industrious worker can turn out a finished teapot fit for ordinary use in a day, but, for the finer specimens a week, a fortnight or even a month is not considered too long for the polishing. The making of these teapots is an ancient and cherished Chinese art and superior productions bear the marks of the Emperors in whose reign they were made, like porcelain. The collection of *Hpan* (teapots) is a favourite hobby in Bangkok and authenticated old specimens of good workmanship often change hands amongst collectors for fabulous sums.

THE FUNERAL CUSTOMS OF THE MONS.

by R. HALLIDAY.

Some time ago a friend wrote saying he had attended a Mon funeral and asking why certain things he had witnessed were done on such occasions. This suggested to me the idea of writing on the subject of this paper. I find it is very common for people to ask why certain things are done when things appear strange to them, but it is not easy to give satisfactory answers. On this matter of the customs at Mon funerals I have a book that professes to give the origin of such customs, and the reasons for some of them. On close examination, however, one finds that it is rather a didactical treatise intended to encourage the devout in the practice of their religion. From the Buddhist standpoint it is rather a fine piece of devotional reading. From the point of view of the enquirer into the funeral customs its chief value lies in its tabulation of the various practices connected with the reverent and affectionate laying away of the remains of the dead. This booklet of some twenty pages of palmleaf manuscript is entitled "Anissamsa Kammathān", which being translated is "The Advantage of a Dead Body". The idea is that there is profit to the living in considering the various things that are done to the dead before they are finally laid away from sight. We shall return to this little book later.

In writing at some length on this subject in "The Talaings" I made use of another and somewhat longer work, which set forth the practices to be observed in the varied conditions and circumstances under which death at times takes place. From that work we can learn the only real reason for the various practices observed in connection with the dead, and that is, that custom kept alive by tradition has decreed that these various observances cannot be lightly set aside. In fact there is great danger to those who neglect them. In borrowing the copy of this work, "Lokasamutti", which has always been readily placed at my disposal, some weeks ago, the owner of it remarked to me with concern that there was now far too much neglect of its rulings. In this case, although like many other books, the origin is referred back to the Buddha's time, there is no reference to the religion

except as the monks and other religions are mentioned in, the carrying out of the various practices, as for instance, when gifts to the monks are forbidden in certain circumstances, or when a religious mendicant is the proper person to carry out a certain act. From this it is very evident that the origins of the customs are anterior to the introduction of Buddhism among the people. The explanations usually offered when people ask the reason for the various practices are to be discredited as of no actual value to the earnest enquirer. I feel quite content when I can find out what seems to be general practice either in one special form or in variations of it. In this paper I shall simply state what I have seen and heard of the practices.

A circumstance which strikes one at the very outset, when one comes into close contact with death amongst this people is the preparations made for the last scenes, and for burial or its equivalent as soon as death is seen to be inevitable. Not long ago word was brought to me that an aged person in whom I was interested was nearing his end. As confirmatory of this I was told that the house was being arranged for death. On reaching the house I found that the inner room in which the old man lay adying as it was thought, had been cleared of everything not actually needed. Mats were spread on the floor with cushions here and there, and curtains had been hung up, and a canopy of white cloth was being prepared. There was of course no ceiling. Such relatives as had been able to answer the summons had gathered in and were sitting about in the death chamber or helping with the preparations in the outer part of the house. Later in the day, those who had been out in the fields and further away also came, some not getting there till late at night. It was in this case the head of a family when more attention is paid to this act of respect and reverence, but even in other cases there is always a measure of this attitude in the near presence of death. Then I found the family anxious for what they called the service for the living, which they deemed a very desirable thing. It seems that the act of death is to be seriously recognised from the religious point of view, though one wonders whether the people do not see some magical influence in the observance. The dying in his extremity is addressed as "Araham" "saint", as if he had attained

arhatship, though whether the people recognise the full signification is quite another thing.

It is not considered out of place to begin at once to make preparations for the last respects even before the death actually takes place, when that event is seen to be near. The coffin is sometimes being made whilst the dying is still conscious. In fact, there are cases when it is deemed fitting to have everything ready to carry out the funeral rites as soon as life is extinct. This is the course of procedure in the case of a person dying in a strange village as indicated in the book "Lokasamutti". When a person is seen to be dying in a village other than his own, it is fitting that his family and relatives should seek out the necessary things for offerings and cremation before death actually takes place so that the corpse can be carried forth at once. Haste is also needed in the case of contagious and other loathsome diseases, and then often no time is taken even to make a coffin, but the body is carried forth with mats and blankets.

In ordinary cases, however, as soon as death has actually occurred, the women take charge in the house and the men in the street, and one will hear the wailing of the women, and see the men busy erecting an awning to shelter the coffin-makers and the musicians. You can never be in any doubt in passing a house where a corpse is lying.

In the bathing of the corpse there is rather a curious arrangement, though what might be its origin, or what its signification, I do not know. The body is bathed by pouring over it seven water-pots of water. The water has to be drawn by seven persons each born on a different day of the week. In proceeding to the well the one born on Sunday goes first, followed by the one born on Monday, the one born on Tuesday, and so on. When the water has been drawn, the drawers keep their order, but the one born on Saturday now leads the way, and the one born on Sunday comes last. According to the booklet "Anissamsa Kammathān" already mentioned, the water should be first boiled and then cooled. When the bathing has been accomplished a chew is put in the mouth of the dead and a piece of money. The two thumbs are tied together, and the big toes with cotton thread. Two pieces of split bamboo the length of the corpse

are placed along the sides of the coffin. These are the bamboo rests for the corpse.

When the body has been dressed and coffined, a suitable structure is made on which to rest the coffin, with a canopy over it. Here the body lies in state till the time of carrying forth, whether long or short, and may be viewed by all as the coffin is left open. It is a duty of the living to view the dead, and reflect on this end of life. A light is placed at each end of the coffin—*panot parang* at the head, and *panot kere* at the foot. The latter is in a pot set in a basin of chaff standing on a tripod.

In carrying away the coffin from the house some peculiar customs are observed. The "Anissainsa Kammathān" says the corpse must not be taken out of the house by the door, because it is the way used by the household, but that the wall must be broken open. This, it seems, is according to circumstances. At a funeral in Ayuthia Monthon I was told that the rule was that the corpse must not pass under a cross beam. In Siam the main part of the house is in three sections, and the body must not be passed from one section to another. If death took place in the middle section which usually has the door, the coffin could be taken out at the door. Otherwise the wall must be broken open, and the body taken through the breach. Sometimes the dying one was removed to the middle section before death took place, so that the body could be carried out at the door. According to the "Lokasamutti", it is only under certain circumstances that the ordinary door cannot be used. It is pretty much the same with the use or non-use of the ordinary stair, although I think that in all cases something is done in case of the stair. At one funeral, I saw the ordinary stair used with a slim bamboo cane laid against it. At another place I saw the coffin carried down quite a different stair at the opposite part of the house. Sometimes the stair is simply turned over. A Mon stair is usually detachable—a biggish short ladder of five steps. It would seem, therefore, that these things are done so that there may be no fault to find.

There is quite a definite understanding as to the road that must be taken to the cemetery. When death takes place outside the village or town, the body must not be brought into the village. Hence even when the nearest road to the cemetery would be through

the village, if the death takes place outside the bounds the long roundabout way must be followed rather than come into the village again. The town of Ye in the Amherst District of Tenasserim, Lower Burma, stands on the site of an old city. Deaths taking place outside the old city wall though in the modern town have to be taken away another way rather than bring them within the old bounds. In villages on the Menam Chao Phaya, Siam, the coffin is taken to the water's edge and put on a boat to be taken to the monastery grounds where the cemetery is. On the Meklong where the water is not convenient for this purpose, the coffin is carried out to the edge of the fields, to avoid passing through the village, and carried round to the monastery, where the service is held and the cremation takes place.

In carrying the coffin, away from the house, a looking-glass is to be taken, and a knife. With the knife the path is to be scratched. The bearers are forbidden to look round behind, but are to keep their eyes fixed on the looking-glass, and on the knife carried before. A drinking vessel of water is to be carried, and a coconut. The coconut is to be broken open, and the water in it and the drinking vessel sprinkled on the corpse. On arrival at the cemetery, the coffin is to be turned round three times, and then placed on the pyre. It is here the corpse is to be sprinkled, and the cords tying the thumbs and big toes are to be cut, and then the fire is to be applied. There does not seem to have been any religious service in the original procedure. The present day Buddhistic service could only be introduced after the coming of the religion in any case. But even in the booklet mentioned which gives the rites a Buddhistic origin, no mention is made of a religious service.

There is always now a service held at the cemetery and sometimes also one at the monastery. I propose to describe them as I have seen them. The service I attended at a monastery took place in the preaching hall. There were mats spread at one end of the hall for the monks, the people occupying the main part of the building. The officiating monk sat with legs crossed, on a raised pulpit standing in the middle of the back part of the hall. The coffin was brought in, and the people made a request for the reading of the law. Tapers were then distributed and

lighted. It was explained to me that this was an offering to the law. The three refuges and the five precepts were repeated by the people, after which the monk read in a clear voice what purported to be a discourse of the Buddha. Following this there was another service at the place of cremation. The coffin was opened, the corpse turned face down, and the bottom knocked out of the coffin. The three times turning round of the coffin also took place here. We were all again presented with fire lighters, and it was the privilege of everyone to help in lighting the pyre.

At another funeral on the banks of the Meklong, the coffin was carried right from the house to the place of cremation. It was the funeral of a Kamnan's wife, and over forty monks were present. The people made the three reverences to the monks and asked for the service. The monks first repeated the *Namo* in praise of the Buddha, response by the people following. The three refuges were recited by the monks, the people following responsively. In the same way the five precepts were repeated. This was followed by something I did not catch. The Pali service usual on such occasions was now intoned by the monks, one of whom acted as leader. The people sat in worshipful attitude with their palms placed together. Some growing tired or forgetting, relaxed by and by and sat more at ease. Some women sat chatting and wanted to converse with anyone who would do so. At the close the people bowed and repeated some formula.

There is a curious custom of throwing a cloth across the burning pyre from one person to another. Some say any cloth may be used, but one booklet says it is the cloth that covered the corpse, and is to be thrown three times. In the booklet a reason is given for it, but that I take it is only a pious reflection on the act. There may, however, be something in the fact that whilst it has been passed through the fire it remains unscathed by the fire. But see the explanation given under.

There are many restrictions in certain defined cases. For a child under ten years no coffin should be made, and cremation is not allowed. Suicides, and people killed by lightning are to be buried standing and the forehead left bare on top. I have no actual instance of this, however. Should the person struck by lightning

die on the spot, he must be buried there. If death results at home the burial may take place in the cemetery.

I should like to close with a brief résumé of the pious reflections of the author of "Anissamsa Kammathān". Nothing whatever of our bodies is imperishable; and all must come to the condition of a dead body without fail.

The firewood signifies merit and demerit—sin and righteousness ill deeds and good deeds. These stir our minds like the heating of water; the former leads us on to the place of punishment and the latter brings us to the condition of bliss. The three stones on which the pot is boiled are the three stages,* the worlds of Desire, of Form and of absence of Form, through which it is fitting that men must make their way until Nirvāna the realm of bliss is attained.

The pot signifies our frail body, and the water boiled in it the attachment of the five senses. When the fire has burned out a person has reached the state of sanctification.

The threads tying the thumbs and great toes are the three snares namely, children who snare the neck, property which snares the feet, and wives who hold the hands. These attachments the sharpest knife cannot sever nor could ages of wearing of water make us free. The sharp knife which cuts the cord is the wise effort by which Nirvāna is attained.

The pieces of split bamboo put along the two sides of the corpse direct men to the way pointed out by the Allwise, whereby we may put aside wrong views and attain right ones.

The four cross pieces in the couch are the four *Apāyas*, the eight abodes of heavenly bliss and the four Brahma heavens, which if a man knows he may by contemplation free himself from the miseries of life and attain the realm of Nirvāna.

The corpse must not be taken out at the door because it is the way for the household to come and go. The wall must be broken down. In this we are following the example of the royal *Suddhodhana*^a of the Sākya tribe.

* *Kānāvacarabhūmi*, *rūpāvacarabhūmi* *arūpāvacarabhūmi*. According to our booklet the first comprises hell, the preta world, the asuraworld; the world of beasts, of men, and of angels (the six *devalokas*). The second comprises, the sixteen heavens of corporeal Brahmas, and the third the four heavens of formless Brahmas.

^a The father of Gotama Buddha.

The corpse is carried out with the head to the front as the Buddha did with his august father. Before that time it was usual to carry with the feet first.

We repeat the five precepts on arrival at the cemetery, because on the death of the Bodhisatva as Chaddanta five hundred Pratyeka Buddhas came and recited the vinaya precepts.

The cloth covering the body is thrown across the fire three times to show the imperishable nature of the three stages. One must enjoy or suffer according to one's merit or demerit.

The path is scratched to signify that there must be no going back, but a straight course for Nirvāna maintained.

The mirror is carried in front and no glance made behind, because there must be no going back on the old life, but the view kept ever forward to the attainment of bliss.

The sharp knife signifies the knowledge which enables us to cut away the evil actions which beset us, and so free ourselves from misery.

The coffin is turned round three time to make people reflect and not pray for the continual course of the three stages.

The cocoanut water is pure water undisturbed, and not like the river or the sea water which is muddy and clear by turns, just as in life in this struggle merit and demerit alternate.

Money is put in the mouth of the corpse to show the utter worthlessness of worldly wealth. The bliss of Nirvāna is the true wealth.

They put a chew in the mouth to show that whilst in life the mouth is prone to speak all kinds of evil to the detriment of others, in death it cannot even chew its own quid, another has to chew for it.

On return from the cemetery the tables and trays have to be overturned, because men must be turned with their face to the ground, and that they may meditate on heavenly bliss.

I have thus given a faint idea of the pious reflections of a religious Mon on the things his people do in laying away the dead from sight. If it at the same time helps to fix attention on the various Mon funeral customs the purpose of my paper will be answered,

NOTE SUR UNE STATUE DE PRINCESSE SIAMOISE DE L'EPOQUE D'AYUDHYĀ.

Par

G. CORDÈS

Conservateur de la Bibliothèque Nationale

Vajirañāṇa.

— : o : —

Le Koṭ Maṇḍirapāla ou Loi des Gardes du Palais, promulguée à Ayudhyā en 1458 A. D. par le roi Paramatrailokanātha, contient une brève description des divers costumes et des différentes parures qui étaient réglementaires à cette époque pour les princes et les princesses de la famille royale, et constituaient en quelque sorte leur "uniforme" de cérémonie.

Ce passage, que l'on trouvera dans l'édition des Koṭmāy en deux volumes par BRADLEY (Vol. II., pp. 126-127) présente, même pour les Siamois les plus instruits, certaines difficultés d'interprétation provenant, d'une part de ce que les termes techniques désignant les parties du costume ou les objets de parure sont en majorité d'origine khmère, et d'autre part de ce que les figurations de princes et surtout de princesses de l'époque d'Ayudhyā sont extrêmement rares.

Aussi, la statuette qui fait l'objet de cette note, outre sa valeur artistique et le charme qui se dégage des traits si fins de son visage et de son torse si gracieusement modelé, cette statuette présente-t-elle un intérêt exceptionnel. Examinée à la lumière du texte du Koṭ Maṇḍirapāla, elle devient susceptible d'une identification à peu près certaine, et, du même coup, certains termes obscurs du texte se trouvent heureusement éclairés.

Cette statuette en bronze noir, qui mesure 0m.42 de hauteur sur 0.27 x 0.22 à la base du socle, fit longtemps partie de la célèbre collection de Phya Sundarabimol (Phle Vasuvāt), Directeur adjoint de la Régie de l'Opium, récemment décédé. Après la mort de ce dernier, elle fut acquise par Monsieur C. Niel, Conseiller à la Cour Suprême, chez qui elle se trouve aujourd'hui.



Statue de Princesse Siamoise de l'époque
d'Ayudhyā (Face) .

Les traits caractéristiques, qui la distinguent à première vue d'une image de divinité féminine, sont la présence d'une sorte de veste croisée sur la poitrine, et l'aspect de la coiffure composée d'un diadème et d'une coiffe laissant apparaître deux petits chignons ronds, un sur le sommet de la tête, et un autre par derrière.

Si l'on se reporte au passage du Koṭṭ Maṇḍirapāla décrivant la tenue de gala des reines et des princesses (1), on voit que :

“Les reines Phra Aggamahesī et Phra Rājadevī portent la tiare pointue (Mongkut) et des babouches dorées ; leur parasol a trois étages et leur véhicule est une litière (2). Les reines Phra Rājadevī et Phra Aggañāyā n'ont pas de tiare, mais portent un chapeau, font un chignon en forme de queue de hamsa et portent des babouches en velours ; leur parasol a deux étages et leur véhicule est un palanquin orné de makaras. Les filles du roi, de premier et de second rang, portent un chapeau, font un chignon rond et mettent une veste à broderies d'or. Les petites filles du roi, de premier et de second rang, portent un diadème, font le chignon rond, et mettent une veste de soie à étoiles.”

Notre statue ne peut représenter ni l'Aggamahesī ni la (première) Rājadevī, puisqu'elle n'a ni la tiare pointue ni les babouches, et qu'elle porte une veste. Elle ne représente pas davantage la (deuxième) Rājadevī ou l'Aggañāyā, toujours à cause de la présence de la veste et de l'absence de babouches, et surtout parce que la

(1) * พระอมรรคเมษี, พระราชเทวีพระราโชปประโภค, มี มงกุฎ เกือกทอง อภิรมลามชั้น, พระราชยาน มี จาลอง. พระราชเทวีพระอมรรคชยา, พระราโชปประโภค ลดมงกุฎ, ทรงพระมาลามวย หงษ์, เกือก กำหยี่ สักลาด มี อภิรมย สองชั้น, เทวียน มีมกรชู. ลูกเธอ เอกโททร พระ มาลา มวย กลม เลื้อโภค ลายทอง. หลานเธอ เอกโพลี เคียบ เพศ มวย กลม เลื้อโภค แพร ตาการ เลว.

(2) Cette explication des termes จาลอง et มกร^๕ m'a été donnée par S. A. R. le Prince Narisaranuvattivongs. Les images de ces véhicules figurent sur les anciens bas-reliefs khmers (Cf. Groslier, Recherches sur les Cambodgiens, fig. 64 et Pl. VII A ; litière de la Reine-Mère). Par *makara* il faut sans doute entendre *nāga*.

coiffure ne saurait être qualifiée de chignon en forme de queue de hamsa (1).

Restent les princesses, filles et petites filles du roi, qui, les unes comme les autres, mettent une veste et portent le chignon rond, comme notre statue. Il eût été difficile au fondeur de représenter d'une façon suffisamment claire les broderies d'or ou les étoiles qui distinguent ces deux séries de princesses. Mais il y a, suivant le texte précité, un ornement caractéristique réservé aux petites filles du roi : le Sirophet (=Sanskrit *Śiroveṣṭa*, "bandeau de tête, diadème"), et c'est manifestement cette parure qui orne la tête de la statuette.

On arrive donc, par élimination, à identifier celle-ci avec l'image d'une princesse petite fille du roi. Ainsi que je l'ai déjà dit, le texte de la "Loi des Gardes du Palais", en même temps qu'il fournit une identification tout à fait satisfaisante, acquiert par là une précision nouvelle : les termes au premier abord un peu embarrassants de เค្ទិយវេស, มวยกาลม, เลื้อยโกด perdent leur obscurité dès qu'ils sont pour ainsi dire illustrés par l'image.

Telles sont les raisons qui m'ont poussé à publier cette statuette, unique en son genre. Qu'il me soit permis, en terminant, de présenter mes remerciements à S. A. R. le Prince Damrong Rājānu-bhāb qui fut le premier à me signaler le passage du Koṭ Maṇḍirapāla, et à M. C. Niel qui a bien voulu autoriser la reproduction d'une des pièces les plus intéressantes de sa collection.

(1) Cette expression désigne sans doute ces coiffures terminées par une longue mèche, comme on en voit fréquemment sur les bas-reliefs khmers (Groslier, Ibid, fig 27, U. V. W.)



Statue de Princesse Siamoise de l'époque d'Ayudhyā (Profile).

THE YANG KALO' (KARIENG) OR WHITE KARENS.

Translation of a paper received from Chiengmai in answer
to the Society's Questionnaire, by E. J. WALTON.

Section I.

PHYSICAL CHARACTERISTICS.

1. They are of medium physique and well proportioned.
2. Neither stout nor thin, but just medium.
3. The face is flat full face, and square in profile. The nose is small and flat full face, and of the shape of a right angled triangle in profile.
4. The lips are thin and dark in colour, broad across and curling upwards.
5. The hair on face, head and body is mostly long, the individual hairs slender and straight and usually sprouting. The hair on the body is short, and the individual hairs small and fine; on the legs they are coarser and longer—at the most about an inch or so—not growing thickly, soft, not curly, black in colour.
6. The eyes are blackish in colour.
7. They are not horizontal. The external corner of the eyelids is a little higher than the rest of the lid.
8. The colour of those parts of the body which are protected from the sun by clothes is of a whitish yellow; the exposed parts are dark yellow. New born babies all have dark blue spots (called non-permanent birth marks) on their backs and buttocks which disappear at about $1\frac{1}{2}$ to 2 years of age.

ADDITIONAL INFORMATION.

- (a) Generally the skull is square but some are misshapen.
- (b) The teeth are mostly black through chewing areca nut and bark.
- (c) Many men and women pierce holes in their ears about 3 centimetres broad.

- (d) Many of the men tatoo their bodies and legs; the body and arms are tatooed in red with vermilion in the form of dragons and various superstitious figures; the legs are tatooed in black with figures of dragons—fantastic animals tatooed according to the fancy of the tatooer—and also in lines.

Section II.

HABITATIONS AND CUSTOMS.

1. *Habitat.* The people like to settle on the slopes or tops of hills within reach of streams; they are also found on the lower levels and near the main rivers, but only in very small numbers. They are numerous in all parts of the Ambhoe of Mê Sarieng and also in the Ambhoe of Mê Hong Sôn. They like to live in small communities of not more than 30 houses at the most and the villages are from 8 to 24 hours' distance apart.

They are agile and not at all stupid. They call themselves "Pakāh Yo'" but by the people living round about they are called "Yāng". Speaking generally they are not very polished in their manners, as their race has no culture of its own, i. e., they don't know much about decent manners or politeness.

2. *Habitations.* Their villages are subject to the ordinary administration of the District. When built on the tops of hills, they are not fenced, the stream and the hill itself being looked upon as the boundaries. If a fence is built, it is only built on the entrance side. Those who live in the low country by the rivers do make fences, using logs or bamboos or slabs (timber).

As regard the actual houses, the people living in the hills build flat houses resembling sheds, roofed with split bamboo slats overlapping each other and looking in the distance like corrugated zinc sheets. The roof is used for drying the rice on. There is a low bamboo floor, square, but no partition walls or outside veranda; the house-ladder goes straight up to the door of the house. The kitchen and the place for receiving visitors are in the sleeping room. The furniture consists of 2 or 3 earthenware cooking-pots, a big wooden platter on which to serve up the

rice and from which every one in the house eats; spoons made of bamboo for dipping out the curry; bamboo cylinders for drawing water, and to hold the drinking water and the water for general use; mats for lying on, woven out of a tree resembling a rush; wooden pillows; baskets, sieves, betel boxes, etc. As a rule very little attention is paid to cleanliness.

3. *Clothing.* The men usually wear sarongs and trousers with a short coat without waist and sewn up to the throat (formerly worn also by the the Siamese); if they wear a long shirt coming down below the knees, they don't wear sarongs or trousers in addition. The coats both of men and of women are without sleeves.

Unmarried girls wear a long white garment reaching nearly to the ankles and no other under garment. Married women wear short jackets embroidered with seeds ("Job's tears"), and "sins" of various colours. There are no special clothes for festival days, but only for the marriage day when new clothes prepared by the bride and bridegroom are worn.

The hair in the case of the men is worn long and knotted on the right towards the back of the head, and a long silk or cotton head-cloth is worn. The women knot the hair right on the back of the head, and use as a head-cloth a square of cotton about 70 centimetres long and folded from corner to corner (diagonally) with the knot in front. Many kinds of ornaments are used. The men sharpen bits of ivory with pointed ends and put them in their ears: these they call "Nā di ka cho' mè." Women have many kinds of ornaments, such as silver or brass armlets of which they put a number of pairs on each arm; silver earrings; and small bells round the ankles. Also they tie black cotton threads round their legs above the calf and round the ankles. They wear many strings of beads round their necks.

4. *Food.* Rice and the flesh of various kinds of animals such as bulls, buffaloes, pigs, crabs, fish, tortoise, sambur, barking deer, snakes, etc; also smaller species such as tree-lizards (𑄎𑄓𑄗𑄓), frogs, etc.—whatever they happen to come across. If they come across

- any animal, it will likely come in their line of food, and there are few species that they won't eat. They are fond of liquor and like to distil it themselves. They smoke tobacco in pipes, but opium smoking is very rare. Areca nut and betel are popular with both men and women. Cooking pots and other utensils are as described in clause 2.
5. *Hunting and fishing.* They are keen hunters and fishermen. For fishing they use casting nets, and weel; and various instruments for shooting, trapping and catching animals, such as cross-bows, snares, traps, spring-traps, pointed stakes and guns. They shoot every kind of animal.
 6. *Means of Transport.* They have no vehicles of any kind.
 7. *Agriculture.* They grow rice and vegetables (gourds, cucumbers, etc.) and grow them well; they plant on the tops of the hills. Their agricultural implements are knives, axes, spades, mattocks etc. Varieties grown are white rice (ချီချီ), sticky rice, maize, a sort of cucumber, melons, millet with big seeds, etc. They keep fowls, cows and bulls, buffaloes, pigs, goats, dogs and cats, but not bees.
 8. *Commerce.* There are no shops or markets in which goods are sold. They have measures; the 'sok' is the unit of length, whilst for measuring capacity they use a woven bamboo measure resembling the Siamese rice bushel (ခဲ), but without the wide mouth. They have a large and a small measure. They use Rupees a great deal. They barter goods, as for example, rice and chillies for cane sugar, areca, betel, etc.
 9. *Industry.* They plait bamboos, forge iron, make pots and weave and sew and embroider, and dye cloth but their work is very rough.
 10. *War.* For weapons they have guns and swords, spears, sharpened stakes and cross-bows.
 11. *Social organisation.* Their methods of showing respect and exercising authority in the family are those common in rural communities, but they regard the eldest son as superior and give him complete authority in his family. They bring up their children in the way common to jungle and hill folk, that

is to say, they do not make much fuss over them, and apart from rice and milk let them eat anything else that is going. They are not in the habit of adopting children or of separating from their own children. Visiting between young men and girls prior to marriage takes place at night, but the girls are very careful, for the custom of the people does not allow of a girl giving herself to a man before he becomes her husband. A girl who does so is looked upon as the lowest of the low, so that even if a girl is forced by a man, she must hide the fact for fear of losing her good name and finding it difficult to get a husband, since it is recognized by the men that if a girl has secret connection with any man not her husband, nobody will court or marry her.

Weddings are celebrated as follows: The bridegroom is taken in procession to the home of the bride. Before they reach the house, that is to say whilst they are still outside the compound the bride's people must meet them with liquor, and before the groom's party enter the bride's compound, magic ceremonies must be performed by an "āchān" to protect them, for they may become spell-bound (ḡḡ ḡḡ as they call it in the north).

When the ceremonies are over, the procession enters the bride's compound and goes to the house to the accompaniment of gongs and drums. Having reached the house, the "go betweens" conduct the bridegroom into the house, and there he divests himself of the clothes which he has worn since leaving his home, and puts on clothes prepared for him by the bride's people. The bridegroom is handed over and the ceremony is at an end. When the "go-betweens" and the bridegroom's friends prepare to return home, the bride's people supply bottles of liquor and accompany them on their way; they stop and drink the liquor together continually and when it is finished, go to their homes.

Parents have the right to beat and abuse their children in a just fashion. When the eldest son approaches the age of 20, if the father and mother think it fitting that he should exercise

authority in the family, they give him authority over all the other children.

As regards inheritance, the eldest son is sole heir but may, at his discretion, share with his younger brothers and sisters. It is very uncommon for them to take estate cases to court, for their custom is well known to them all.

They bring up and educate their children in the ordinary way, teaching them to work the rice fields and make a living out of the land.

They are subject to the civil and criminal law of the country, having no legal codes of their own.

12. *Art.* They do a little in the way of drawing and painting, carving, moulding clay, and music, but their work is very inferior. They have dances and they compose songs called by the northern people "Sò Yāng" (i. e., Karen songs). They have games of various kinds on the occasion of the death of a headman of a village; these they call "Yòkkri" "Khu'n pu'ng". They have no writing of their own, but some of them learn foreign writing. They have tales in their language.
13. *Science.* They have the divisions of days, months and years. The day is divided into morning, midday, evening; 30 days make a month. The Siamese 5th month is their 1st month, 12 months make a year, so the Siamese 4th is their 12th month. They have no era of their own. They have little knowledge of drugs or medicine. When ill, they consult omens and the soothsayers to find out what spirit has got hold of them. They trust to offerings to the spirits to cure themselves.
14. *Religion.* They believe in and sacrifice to the spirits. A newly born baby is laid on a cloth and put in a flat basket and they go through a ceremony of sifting and buying it. When the age of maturity is attained, there is no particular ceremony. When a person dies, they take the clothes away and wrap the body in a white cloth as one wraps up boiled rice in a packet; they then tie it round and round with pò (rope of hibiscus tree) or rattan and wrap it up in a second covering of bamboo mat-

ting. The relations then come and tell the corpse the road to travel, so as not to go up and be born in Heaven but to come and be born again amongst his own people, for they regard Heaven as an empty space where there is no working of raiſ or ploughing of fields and men muſt faſt and hunger. After one, two, or three days, the relatives carry the body away and burn or bury it, whichever they think beſt. When burying, they make the grave a little longer and broader than the body. Men are laid on their faces and women on their backs, and the grave is filled in with earth. Long boards are laid on top of the earth and two wooden hooks are driven in between the neck, the intention being to prevent the ſpirit of the dead perſon from going up and being born in Heaven. They make a rail and hang on it new cloth and new coats and other objects as preſents to the dead perſon; if there is any gold or ſilver amongst the preſents it is buried at the ſpot. Over the cloth and jackets, they ſpit betel juice to make them ſtained as they believe that unleſs they do this, the dead perſon will not get them. The places where bodies are buried or burnt are not looked after.

Offerings to the tutelary ſpirits of the locality are made when they firſt clear raiſ (fields) or plant rice or reap it; alſo when they build a new village or houſe. They ſalute the ſpirits ſuppoſed by them to be in trees, in piles of ſtones, ſtones or ſtreams, but they have no particular tree which ſhould be worſhipped; any big tree or ſtone or river or ſtream in which they aſſume there is a ſpirit, they ſalute it whenever they come on it, and if they make a ſacrifice, they ſacrifice a fowl, believing that the angels and the guardian ſpirits are there. This belief in ſpirits is inherited from ancient times and is paſſed on. They believe that God created the world and that the next world is Heaven, which they regard as an empty ſpace where one has no means of livelihood. They have a ſtory which has been handed down to them to the effect that when God came down to build the world, he ſummoned them to come and make merit and live together in the world, but they did not arrive in time as they were busy ſacrificing to and feeding the ſpirits. God then gave them the name of "Yang" (not yet)

which subsequently became “Yāng”. Accordingly they hold that for them it is no sin to kill animals, seeing that they have no religion and were not in time to be present when God founded the world.

เรื่อง ร่างกาย ธรรมชาติ ประเพณี การ เลี้ยงชีพ

ทั้ง ภาษา ชาว ยาง กะเล (เกรียง)

ประเภท ที่ ๑

ว่า ด้วย สรีระ ลักษณะ รูปร่าง สันฐาน แห่ง ร่างกาย

คำ ถาม	คำ ตอบ
๑) รูปร่าง สันฐาน สูง ต่ำ เท่า ไร ทรวด ทรง อย่างไร.	๑) รูปร่าง สันฐาน แห่ง ร่างกาย ปาน กลาง ทรวด ทรง สัน ทัด.
๒) อ้วนท้วน หรือ ช้อน ข้างผอม เป็น ประการ ไต.	๒) ไม่อ้วนนัก และไม่ผอมนัก นับ ว่า พอ ปาน กลาง.
๓) ลักษณะ แห่ง หน้า ตา เมื่อ ดู ตรง จําเพาะ หน้า เป็น อย่างไร เมื่อ ดู ข้าง หน้า เขียว เป็น อย่างไร จมูก เมื่อ ดูตรง และ ดูข้าง มี ลักษณะ อย่างไร.	๓) ลักษณะ แห่ง หน้าตา เมื่อ ดู จําเพาะ หน้า แบน เมื่อ ดู ข้าง ๆ เป็น หน้าเขียว เป็น สี เหลือง จมูก เมื่อ ดู ตรง เล็ก และ แบน เมื่อ ดู ข้าง เป็น สาม เหลี่ยม มุม ฉาก.
๔) ริม ฝีปาก หนาบาง อย่างไร มี วรรณะ สันฐาน อย่างไร บ้าง.	๔) ริม ฝีปากบาง มี สี คล้ำ และ สันฐาน กว้าง เชิด ขึ้น.
๕) ทนวดเครา เฝ้าม และ ชน ตาม สรรพวงค์ กาย มี ลักษณะ อย่างไร ตาม ธรรมชาติ มัน งอก ยาว สั้น อย่างไร	๕) ทนวดเครา เฝ้าม และ ชน ตาม สรรพวงค์ กาย มี ลักษณะ ไว้ ยาว เลี้ย โดย มาก เส้นเล็ก และ เหยียด

คำ ถาม

หนา บาง ห่าง ถี่ ค่น ไม่ ค่น อย่าง ไว
แขง อ่อน ประการ ไต ผม หยิก หรือ
ไม่ หยิก ถ้า หยิก ๆ เอง หรือ เปน
เพราะ วิธีเต่ง อย่างใด อย่างหนึ่ง. หนวด
ควา ก็ ดี ผม หรือ ขน ก็ ดี มี เปน
อย่าง ไว.

๖) ถู ก นัยตา มี ลี สรร วรรณะ
อย่าง ไว.

๗) หัวตา กับ หางตา ได้ ระดับ
กัน หรือ ไม่ หรือ หัวตา กับ หาง ตา
ข้าง ไหน สูงต่ำ กว่ากัน เปน ประการ ไต
ขอบ ข้าง หาง ตา กับ ขอบ ข้าง หัว ตา
สูง ต่ำ กว่า กัน เปน ประการ ไต.

๘) ลี สรร วรรณะ ของ ร่างกาย
ซึ่ง ไม่ ถู ก แสง แดด เพราะ เลื่อ ผ้า
ปิด บัง เปน อย่าง ไว ผิด กัน อย่าง ไว
กับ ส่วน ของ ร่างกาย ซึ่ง ไม่ มี เครื่อง
นุ่ง ห่ม ปิด บัง เลย ทารก เมื่อ แรก
คลอด มี แขน ตำ ๆ เขียว ๆ ติด อยู่
ตาม หลัง บ้าง หรือ ไม่ ปาน กำเนิด

คำ ตอบ

(ตาม ขรรพตา มั่น ออก) ขน ตาม
สรรพางค์ ลี้น แด เส้น เล็ก ละเอียด
ขนแข็ง เส้น เชื่อง และ ยาว กว่า ขนตาม
ตัว อย่าง ยาว ที่ สุด ๑ นิ้ว ฟุต เศษ
ไม่ ลี้น จะ หนานัก ห่าง ไม่ ตก และ
เส้น อ่อน ไม่ หยิก มี ลี ตำ.

๖) ถู ก นัยตา มี ลี ค่อน ข้าง
ตำ.

๗) หัวตา ต่ำ หาง ตา สูง ไม่
ได้ ระดับ น้ำ (เติ) ขอบ ข้าง หาง
ตา สูง กว่า ขอบ ตา เล็ก น้อย.

๘) ลี สรร วรรณะ ของ ร่างกาย
ซึ่ง ไม่ ถู ก แสง แดด เพราะ เลื่อ ผ้า
ปิดบัง เปน ลี ขาว เหลือง ส่วน ของ ร่าง
กาย ซึ่ง ไม่ มี เครื่อง นุ่ง ห่ม ปิด
เปน ลี เหลือง ค่อน ข้าง คล้าม ทารก
เมื่อ แรก คลอด มี แผล ตำ ๆ เขียว ๆ
(ที่ เรียก ว่า ปาน กำเนิด ขั้ว ควา)

คำ ถาม	คำ ตอบ
ชู้ คราว ชนิตนี้ มีติดตาม ตัว ทารก ประมาณ อายุ เท่า ไ.	ติด อยู่ ตาม หลัง และ ก้น ทุกคน ต่อ ประมาณ อายุ ๑ ปี ครึ่ง ถึง ๒ ปี ก็ หาย หมด.

คำ ขี้ แจง เพิ่ม เติม

๑ บาง คน มี กระโหลก ศีรษะ ทุย คือ ตาม ขรรดากะโหลก ศีรษะ เปน สี เหลี่ยม.

๒ โดย มาก มัก ย้อม ให้ ฟัน ดำ เพราะ กิน หมาก และ เปลือกไม้.

๓ โดย มาก ชาย หญิง มัก ชอบ เจาะ หู และ ไช ให้ กว้าง เกือบ ๓ เซ็นติเมตร.

๔ โดย มาก ชาย มัก ชอบ สัก ตาม ตัว และ แขน ขา ตัว แล แขน สัก ด้วย ขาดิ แดง เปน รูป สิงห์ มอม และ ยัน ต่าง ๆ ขา สัก ด้วย หมึก ดำ เปน รูป สิงห์ มอม และ เปน รอย ชิด ๆ ก็ มี.

ประเภท ที่ ๒

ว่า ด้วย ทำ เล ที่ อยู่ และ ลักษณะ ชนบ ธรรมเนียม

คำ ถาม	คำ ตอบ
๑) ว่า โดย ฐาน ที่ อยู่ ทั่วไป.	๑) คน จำพวก นี้ โดยมาก มัก ชอบตั้งภูมิลำเนาอยู่ ตาม ไร่ เขา หรือ บน ล้น เขา ที่ อาศัย น้ำ ห้วย ได้ เสีย โดย มาก ตาม ที่ ลุ่ม ๆ และริม แม่น้ำ ลำธาร ก็ มี แต่ เปน จำนวน น้อย

คำ ถาม

๒) ว่า โดย ฐาน ที่ อยู่ โดย เฉพาะ.

คำ ตอบ

คน จำพวก นี้ โดย มาก มัก มี อยู่ตาม
ทิศ ต่าง ๆ ของ อำเภอ แม่ สะเรียง
และ ใน ท้อง ที่ อำเภอ ต่าง ๆ ของ จัง
หวัด แม่ฮ่องสอน และไม่ได้ อยู่
เป็น ปึกแผ่น แน่นหนา มัก อยู่เป็น
หมู่ ๆ ใน หมู่ หนึ่ง อย่าง มาก มีเพียง
๓๐ หลังคาเรือน และ ระยะ ทาง ไป
ใน หมู่ หนึ่ง ถึง หมู่ หนึ่ง ห่าง กัน ตั้ง
๘-๑๔ นาฬิกา เป็น อย่าง พอดี เป็น
คน มี เขียว ใส ไม่ สู้ จะ ไร่ ที่ ปาน
โต นึก เขา เรียก ชาติ ของ เขา ว่า
“ ปะกายอ ” ส่วน คน ชาติ อื่น อยู่
ใกล้ เคียง เรียก ชาติ ของ เขา ว่า
“ ยาง ” ถ้า ว่า โดย ทัว ไป แล้ว
กิริยามารยาตร์ ของ เขา ไม่ สุภาพ เรียบ
ร้อย เพราะ ชาติ ของ เขา เอง ไม่
มี การ ถือ सा อะไร กัน.

๒) หมู่บ้าน ที่ อยู่ เขา จัด การ
ปกครอง ตาม พระราช บัญญัติ ปกครอง
ท้อง ที่ เคหกิจ ล้อม ภาย นอก เช่น

คำ ถาม

คำ ตอบ

รั้ว บ้าน ถ้า เป็น พวก อยู่ บน เขา
 ไม่ มี รั้ว บ้าน เพราะ เขา ถือ เอา
 เขต รั้ว และ เขา เป็น รั้ว บ้าน ถ้า
 จะ ล้อม รั้ว ก็ ล้อม แต่ ทาง เข้า บ้าน
 ด้าน เดียว เท่านั้น ส่วน พวก ที่ อยู่
 ริม น้ำ ลำธาร ต่ำ ลง มา มี รั้ว กัน ล้อม
 บ้าน รั้ว เขา ใช้ ต้น ไม้ บ้าง ไม้ ไผ่
 บ้าง ไม้ จริง บ้าง บ้าน เรือน ที่ เขา
 อยู่ ถ้า อยู่ บน เขา ทำ หลังคา แบบ
 รูป คล้าย ปรางค์ มุง ด้วย ไม้ ไผ่ ฝา ชัก
 คลอบ ๆ กัน เมื่อ แล ตู โกล ๆ
 คล้าย มุง สังกะสี ถูก พายุ และ บน
 หลังคา นั้น สำหรับ เปน ที่ ตาก ข้าว
 ด้วย ฝา ก ต่ำ มี สี่ ด้าน ฝา ประ
 จัน ห้อง ไม้ มี ขาน ไม้ มี บรโต
 พาด ที่ ประตู่ เรือน ที่ เดียว ครัว ไฟ
 และ ที่ รั้ว แยก อยู่ ใน เรือน นอน
 ข้าง ใน มี เครื่อง สัมภาระ ไร่ ไร่ คือ
 หม้อดิน สำหรับ หุง ต้ม ๒-๓ ใบ กระ
 ะ ไม้ อย่าง ใหญ่ สำหรับ คัด ข้าว และ

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คำ ถาม

๓) ว่า ด้วย การ นุ่ง ห่ม.

คำ ตอบ

กิน รวม กัน ใน กระบะ นั้น หมด ทุก ๆ
คน ซึ่ง อยู่ใน เรือน นั้น ช้อน ทำ
ด้วย ไม้ ไม้ สำหรับ ตัก แอง กระบอก
ไม้ ไม้ สำหรับ ตักน้ำ แล ใส่ น้ำ กิน
และ น้ำ ไข่ เลือ สาน ด้วย พรวณ
ไม้ ชนิด หนึ่ง คล้าย ตันกอก สำหรับ ปู
นอน หมอน ไม้ สำหรับ หนุน และ
ตะกร้า กระตัง ตะแกรง เขียน
หมาก ฯลฯ ตาม ขรรมดา การ วั
ษา ความ สะอาด มี น้อย ที่ สุด.

๓) ตามปกติ ชายมัก นุ่ง ไสว
กางเกง ไข่ คู่ กัน กับ เลือ กระบอก
อย่าง สั้น ถ้า ไข่ เลือ กระบอกอย่าง
ยาว ลง ปก เข้า ไม่ ต้อง นุ่ง ไสว
และ กางเกง อีก เลือ ทุก ชนิด
แขน เสมอ ไหล่ ไม่ มี แขน ต่อ ยาว
ออกไป อีก ทั้ง หู ทั้ง ขา หู
เมื่อ ยัง เปน สาว (คือ หมาย ความ
ว่า ยัง ไม่ มีสามี) ใส่ เลือ กระบอก
สี ขาว ยาว ลงไป เกือบ ถึง ข้อเท้า ไม่

คำ ถาม

คำ ตอบ

ต้อง นุ่ง ผ้า ถ้า มี สามี่ แล้ว ใช้ เสื้อ
 สั้น ปัก ประดับ ด้วย ลูก เดื่อย และ นุ่ง
 ชิน สี ต่าง ๆ การ นุ่ง ห่ม ใน วัน นัก
 ขัด ฤกษ์ ไม่ มี มี แต่ วัน แต่ง งาน
 เท่านั้น คือ เปลี่ยน นุ่ง ห่ม ผ้า เสื้อ
 ใหม่ ที่ คู่ บ่าว สาว มี เตรียม ไว้ การ
 ไว้ผม ผู้ชาย ไว้ผม ยาว เกลาผม
 หมดไป ช้าง ขว้า เนื้อ ท้าย ทอย นิต
 หน้อย และ มี ผ้า ไหม หรือ ด้าย ยาว
 โปก ศีรษะ หญิง เกลาผม หมด ตวง
 ท้าย ทอย และ มี ผ้า ด้าย สี เหลี่ยม
 ขนาด ๓๐ เซ็นติเมตร พับ ทะแยงมุม
 โปก ศีรษะ และ เอา เงื่อน ไว้ ข้าง หน้า
 เครื่อง ประดับ ร่าง กาย มี หลาย อย่าง
 สำหรับ ชาย เขา เอา งา มา เหลา ให้
 แหลม และ ปลาย เรียว แล้ว ใส่ หู
 เรียก ว่า “ นาคีทะขอแม ” หญิง
 มี เครื่อง ประดับ ประดา หลาย อย่าง คือ
 กำไล เงิน หรือ ทอง เหลือง ใส่ แขน ข้าง
 ละ หลาย ๆ คู่ มี ต่าง หู ทำ ด้วย เงิน

คำ ถาม

๔) ว่า ด้วย อาหาร การ บริโภค

คำ ตอบ

ใส่ หู และ ลูก พรวน ผูก ช้อ เท้า กับ มี เชือก ด้าย ตำ ๆ คาค ที่ เหนือ น่อง และ ที่ ช้อ เท้า กับ มี ลูก ปัด สี ต่าง ๆ ร้อย เปน พวง มาลัย แว่น คอ คน ละ หลาย ๆ พวง.

๕) อาหารข้าว และเนื้อสัตว์ต่างๆ

ทุก ชนิด เช่น เนื้อ วัว, ควาย, หมู ปู, ปลา, เต่า, กวาง, อีเก้ง, เนื้อ, ฐู ๖ ล ๖ และ สัตว์ เล็ก บาง ชนิด เช่น แย้, อึ่ง กบ แล อย่าง อื่น ๆ อีก แล้วย แต่ พบ ปะ ถ้า ปะ สัตว์ อะไร เข้า โดย มาก มัก จะ เปน อาหาร ของ เขา ได้ มี จำนวน ที่ เขา ไม่ กิน น้อย อย่าง ชอบ ดื่ม สุรา เมรัย และ ชอบ ต้ม กลั่น เอง และ สูบ ยาเส้น ยัด กล้อง ยา ผื่น ไม่ ไคร่ จะ มี ไคร่ สูบ หมาก พลุ นี้ เปน ของ ที่ เขา ชอบ และ กิน ทุก ๆ คน ไม่ว่า ชาย และ หญิง เครื่อง หุง เครื่อง ต้ม และ ภาชนะ เครื่อง ใช้ สรรอย อื่น ๆ ดัง มี ปรากฏ ใน ข้อ ๒ แล้วย.

คำ ถาม

๕) ว่าตัวยกรหาเนื้อหาปลา.

๖) ว่า ตัวย คมนาคมการไปมา
ต่าง ๆ

๗) ว่า ตัวย การ กลิกรรม.

๘) ว่า ตัวย การ คำ ขาย แลก
เปลี่ยน.

คำ ตอบ

๕) เขาเป็นคน ชอบหาเนื้อหา
ปลาเครื่อง หา ปลา มี เห ไช เครื่อง
ยิง ตัก จับ ต่าง ๆ มี หน้าไม้ ตัก
บ่วง ขัด จัน เสา ขัด หลาว ขัด
ปิ่น เขา ยิง สัตว์ ป่า ได้ ทุก ชนิด.

๖) ยานพาหนะ ต่าง ๆ ไม่มี.

๗) มีการทำไร่ข้าว ไร่ผัก, พัก
แเตง ต่าง ๆ ของ ที่ เขา ปลุก อก
งาม ดี และ เขา ปลุก บน สัน เขา
เครื่อง มือ มี มีด ขวาน, เลื่อย,
จอบ, ฆ ฆ ฟันฟันซี่ ที่ เขา ปลุก
มี ข้าว จ้าว ข้าว เหนียว ข้าว โภช
แเตง รัน แเตง ไทย ข้าว ฟาง เม็ด
ใหญ่ ฆ ฆ เขา เลี้ยงไก่. โค.
กระบือ. สุกร. แพะ. และสุนัข.
แมว. ตั จึง เขา ไม่ได้ เลี้ยง.

๘) การ ตั้ง ร้าน ตั้ง ตลาด ขาย
ของไม่มี เขา ใช้ เครื่อง วัด ตวง คือ
วัด ส่วน ยาว ใช้ คอก เครื่อง ตวงใช้

คำ ถาม

๙) ว่า ด้วย หัตถกรรม.

๑๐) ว่า ด้วย การ รบ.

๑๑) ว่า ด้วย ขั้วมเนียมการปกครอง.

คำ ตอบ

ไม้ ไม้ สาน เปน รูป คล้าย สัต ตวง
ข้าว ของ เรา แต่ ปาก ไม้ ฝาย มี ๒
ชนิด คือ อย่าง ใหญ่ และ อย่าง เล็ก
เขา นิยม ใช้ เงิน รุเปี้ย กัน มาก และ
สิ่ง ของ อื่น ๆ เขา ก็ แลก เปลี่ยน กัน
เช่น เอา ข้าว และ พริก ไป แลก น้ำ
อ้อย หมด มาก พลุ ๆ ล ว

๙) การ หัตถกรรม ของ เขา เช่น
การจักสาน การ ดีเหล็ก การทำหม้อ
การ ทอ พูก การ เย็บปัก การ ย้อม
ผ้า มี บ้าง แต่ เปน ของ หยาบ ๆ

๑๐) เครื่อง อาวุธ ยุทธภัณฑ์
ของเขามี ปืน, ดาบ, หอก, แหลน,
หูลาว, น้ำ ไม้ เปน เครื่อง ประหาร.

๑๑) การ เคารพ นับ ถือ เคารบ
คัมภีร์ ใน ระหว่าง ครอบครัว อย่าง
คน สามัญ บ้าน นอก แต่ เขา ถือ ลูก
ชาย ห้า ปี เปน ใหญ่ และ มี อำนาจ
สิทธิ์ ชาติ ใน ครอบครัว นั้น การ
เลี้ยง ลูก เขา รักษา และ เลี้ยง ตาม

คำ ถาม

คำ ตอบ

ธรรมดา คน ชาว ป่า ชาว ดอย คือ
ไม่ใคร่ ประคบ ประครอง อะไร นัก หนา
ส่วน อาหาร นอก จาก ข้าว กับ นม
อาหาร อื่น ๆ แล้ว แต่ จะ มี ให้กิน
ทุก อย่าง การ รับ ลูก บุญกรรมและ
การ ตัด ขาด จาก ลูกไม่ใคร่ จะ มี
การ ไป มา หา สู้ ใน ระหว่าง หญิง กับ
ชาย ก่อน ที่ จะ รับ เปน สามี ภรรยา
กัน มี ไป มา หา สู้ กัน เสมอ ใน
เวลา กลาง คืน แต่ ฝ่าย หญิง ระวัง
มาก เพราะ ประเพณี ไม่ ยอม ให้
เสีย ตัว ก่อน ที่ จะ ได้ แต่ง กัน เปน
สามี ภรรยา เพราะ เขา ถือ ว่า ถ้า
หญิง ยอม เสีย ตัว ให้ แก่ ชาย ก่อน
ที่ จะ ได้ แต่ง งาน แล้ว นับ ว่า เปนคน
เลว ที่ สุด ถึง หญิง จะ ได้ เสีย ตัว
ไป โดย ถูก กต ธิ ก็ ต้อง ปิด บัง
ไม่ให้ ใคร รู้ เพราะ กลัว เสีย ชื่อ
และ ผู้ชาย ระวัง เกียจ หา มัว ได้ ยาก
เพราะ ตาม นิยม ของ ชาย ถือ ว่า ถ้า
หญิง สาร นั้น ลัก ลอบ เสีย ตัว ให้ กับ

คำ ถาม

คำ ตอบ

ชาย คน ไต คน หนึ่ง โดย มิ ได้ แ่่ง
งาน กัน เขา รัง เกียจ ไม่ ขอ และ
แ่่ง งาน ด้วย หึง นั้น เปน อัน ขาด
การ วิวาท์ แ่่ง งาน กัน นั้น วิธี ที่
ทำ กัน นั้น คือ แ่ เจ้า บ่าว มา ส่ง ที่
บ้าน เจ้า สาร ก่อน ที่ จะ แ่ มา ถึง
บ้าน เจ้า สาร (คือ นอก บริเวณบ้าน)
ต้อง มี พวก ทาง เจ้า สาร นำ เอา สุรา
ไป รับ ฝ่าย เจ้า บ่าว และ เมื่อ ก่อน
ที่ ฝ่าย เต้ แก่ เจ้า บ่าว จะ เข้า บ้าน
(ใน บริเวณ บ้าน เจ้า สาร) จะ ต้อง
มี อาจารย์ ทำ พิธี แ่ เป่า ป่อง กัน
ฝ่าย เต้ แก่ พวก เจ้า บ่าว ไว้ (เพราะ
เขา ถือ ว่า เคย มี ญ คุณ เรียก
ตาม ภาษา ขาว เหนือ ว่า “ ญ ตู ”)
เมื่อ ทำ พิธี เสร็จ แล้ว ก็ แ่ เข้า บริเวณ
บ้าน เจ้า สาร จน ถึง เว้น ขบวน
แ่ มี ฆ้อง กลอง เมื่อ ถึง บ้าน เจ้า
สาร แล้ว เต้ แก่ ก็ นำ เจ้า บ่าว ขึ้น
เรือน เจ้า สาร และ ผลัด เลื้อ ผ่า ที่
เจ้า บ่าว นุ่ง มา จาก บ้าน ออก เอา

คำ ถาม

คำ ตอบ

เลื้อย ไม้ ที่ ของ เจ้าสาว เตรียม ไว้ นั้น
 นุ่ง ห่ม ต่อไป และ ทำ การ ส่ง ตัว
 เจ้า บ่าว เปน อัน เสรีจ การ เมื่อ แก่
 แก่ แล พวก พ้อง เจ้าบ่าว จะ กลับบ้าน
 ฝ่าย พวก เจ้า สาว จัด หา สุรา ใส่ขวด
 ตาม ไป ส่ง และ หยุด เลี้ยง สุรา กัน
 เรื่อย ไป จน สุรา หมด ก็ ลา กัน
 กลับ บ้าน เปน อัน เสรีจ การ พ่อ
 แม่ มี อำนาจ เขียน ตี ต่ำ ว่า บุตร
 บุตรี ได้ โดย ขอบกรรม และ ถ้า เมื่อ
 บุตร ชาย หวัง ปี เขา มี แล อายุ ย่าง
 เข้า, ๒๐ ปี บิดา มารดา เห็นว่า สม
 ควร จะ เปน ผู้ใหญ่ ปกครอง วงศ์ ตระกูล
 ได้ ก็ มอบ อำนาจ อัน นั้น ให้ แก่
 บุตร ชาย ใหญ่ มี อำนาจ เหนือ บุตร
 ทั้งหลาย ต่อไป การ สืบ เชื้อ รับ
 มรดก เขา ให้ บุตร ชาย หวัง ปี เปน ผู้
 รับ มรดก ผู้ เดียว ตาม ใจ จะ แบ่ง
 ปัน ให้ น้อง ๆ ได้ ตาม สมควร เรื่อง
 มรดก โดย มาก เขา ไม่ ว่า กล่าว ถึง
 โอง ศาล เพราะ เขา มี ธรรมเนียม

คำ ถาม

๑๒) ว่า ด้วย ศิลป วิทยา คม.

๑๓) ว่า ด้วย วิทยา ศาสตร์.

คำ ตอบ

รู้กัน อยู่ ตั้ง นั้น การ เลี้ยง ลูก เค้า
เขา เลี้ยง และ สอน ไป ตาม ขรรคตา
มี การ ฝึก หัด ให้ ทำ ไร่ ช้าง และ ทำ
มา หา กิน ตาม ภูมิ ลำเนา ๖ ล ๖ เขา
อยู่ใน ใต้ อำนาจ กฎหมาย อาญา กฎ
หมาย แห่ง ของ รัฐบาล ของ เขาเอง
ไม่มี.

๑๒) การวาดเขียนสลัก แกะไม้
และ ดนตรี มีให้ มี บ้าง แต่ เปน
อย่าง เลว ที่ สุด การ มหรรพ ฟ้อน
รำ ทำ เพลง มี บ้าง เรียก ตาม ชาว
เหนือ ว่า “ ซอ ยาง ” การ ละเล่น
ต่าง ๆ มี ใน เวลา ที่ คน ผู้ใหญ่ ใน
บ้าน นั้น ตาย “ เขา เรียก ว่า “ ยอก
กั้ว ” “ ชื่น ชื่น ” หนังสือ ขาดิเขา
ไม่มี แต่ บาง คน เขา เขียน หนังสือ
ขาดิอื่น นิทาน นิยาย ของ เขา ก็
มี ตาม ภาษา ของ เขา.

๑๓) เขานับเวลา วัน เดือน ปี
คือ นับ เวลา เข้า เพียง เย็น ใน

คำ ถาม

๑๔) ว่า ด้วย ลัทธิ ศาสนา.

คำ ตอบ

วัน หนึ่ง มี ๓ เวลา วัน นั้ วัน ๑—
๒—๓ ไป จน ครบ ๓๐ วัน เป็น เดือน
๑ เดือน เขา นับ ตั้ง ต้น เดือน ๕
ของ เรา เป็น เดือน ที่ ๑ และ เดือน
๒—๓ ต่อ ไป จน ครบ ๑๒ เดือน เป็น
๑ ปี เดือน ๔ ตรง กับ เดือน ที่ ๑๒
ของ เขา นับ ปี ของ เขา ไม่ มี การ
ใช้ หยูก ยา วิช า แพทย์ ไม่ ไคร่ มี ถ้า
มี การ เจ็บ ป่วย เขา ใช้ เสี่ยง ทาย แล
ดู หมอ ว่า ถูก ผี ต้อง อะไร มี การ
แก้ ด้วย การ พลี แล บวง สรวง ต่าง ๆ

๑๕) เขา นับถือ ผี และ ไหว้ ผี เส้น
ผี ทารก เกิด ใหม่ ๆ เขา เอา ผ้า
รอง ใส่ กระตัง และ ทำ พิธี ร่อน และ
รับ ซ้อ เมื่อ อายุ ย่าง เข้า เป็น หนุ่ม
สาว เขา ไม่ มี พิธี อย่าง ไร เมื่อ
คน ตาย แล้ว เขา เอา ผ้า และ เลื่อ
นุ่ง ห่ม ให้ แล้ว เอา ผ้า ขาว ห่อ อย่าง
ห่อ ซ้าย ต้ม เอา ปอ หรือ หวาย มัด
เป็น เปราะ ๆ แล้ว เอา เลื่อ ถ้ำ แพน

คำ ถาม

คำ ตอบ

ห่อ อีก ชั้น หนึ่ง เสรีจ แล้ว พวก ญาติ
 พี่ น้อง มา บอก ทางไม่ ให้ ขึ้น ไปเกิด
 บน สวรรค์ ให้มา เกิด อยู่ใน หมู
 ของ เขา นี้ อีก เพราะ เขา ถือ ว่า
 สวรรค์ นั้น เปน ที่ ว่าง ไม่ มี ที่ ทำ ไร
 ไถ นา อะไร จะ ไป อยู่ อด ๆ ยาก ๆ
 เมื่อ ครบ กำหนด ๑ วัน หรือ ๒-๓ วัน
 พวก ญาติ พี่ น้อง ช่วย กัน หาม ไป เมา
 หรือ ฝัง แล้ว แต่ การ จะเหมาะ วิธี ฝัง
 เขา ขุด หลุม ให้ กว้าง ยาว กว่า ตัว เล็ก
 น้อย แล้ว เอา ศพ นั้น ฝัง หญิง
 นอน หาย ชาย นอน คว่ำ และ กลบ
 ด้วย ดิน เสรีจ แล้ว เขา เอา ไม้
 เปน ท่อน ๆ ยาว ๆ ทับ บน อีก ชั้น
 หนึ่ง และ มี ไม้ ขว ๒ อัน ปัก ไว้
 ที่ ระหว่าง คอ ไม้ ขว ที่ ปัก นี้ เขา
 หมาย ความ ว่า ไม่ ให้ วิญญาณ ของ
 ผู้ ที่ ตาย ไป นั้น ไป บังเกิด บน สวรรค์
 และ มี น้ำ ใหม่ เลือด ใหม่ และ สิ่ง ของ
 ต่าง ๆ ซึ่ง จะ ให้ แก่ คน ตาย นั้น เขา
 ทำ ราว และ เอา สิ่ง ของ นั้น ผูก และ

คำ ถาม

คำ ตอบ

ห้อยไว้ ถ้า มี เงิน ทอง อะไร ก็ฝัง
 ไว้ ใน ที่ นั้น ส่วน เสื้อผ้า นั้น เขา
 บ้วน น้ำ หมาก รด เสีย ให้ เปื้อน หมด
 ทั้ง ผืน ถ้า ไม่ ทำ ดัง นั้น เขา ถือ
 ว่า คน ตาย จะ ไม่ ได้ สถาน ที่ ๆ
 ฝัง ศพ, เผา ศพ, เขา ไม่ มี การ รั
 ษา อะไร การ บูชา พระ ภูมิ เจ้า ที่
 เขา มี เวลา เมื่อ จะ ลง มือ ตางไร หรือ
 ปลุก ขำไร ก็ ขำไร หรือ
 จะ ไป ตั้ง บ้าน ใหม่ ปลุก เรือนใหม่
 การ ไหว้ ผี เขา สมมุติ ว่า อยู่ ที่ ต้นไม้
 หรือ กอง, ก้อน หิน, แม่ น้ำ ลำธาร
 ก็ มี แต่ ไม่ ถือ ว่า ต้น อะไร ควร ไหว้
 ถ้า เปน ต้นไม้ ใหญ่ หรือ ก้อน หิน แม่
 น้ำ ลำธาร อะไร ที่ เขา สมมุติ ว่า มี ผี
 ถ้า เขา พบ ปะ เขาก็ ไหว้ ทุก ความ และ
 ถ้า มี การ เล่น เขา เล่น ด้าย โกว เพราะ
 เขา ถือ ว่า เทพ ยดา และ ผี รักษา
 อยู่ ที่ นั้น การ เชื้อ คือ ผี สาง นี้ สืบ
 เนื่อง มา จาก โบราณ และ ถือ กัน ต่อ ๆ
 มา เขา ถือ ว่า พระ เจ้า เปน ผู้ บัน

คำ ถาม

คำ ตอบ

ตาล ให้ โลก มี ขึ้น โลก หน้า เขา
ถือ ว่า เปน สรรค์ และ สรรค์ นั้น
เปน ที่ ร่วง เปล่า ไม่ มี ที่ ทำ มา หากิน
เขา มี นิยาย เล่า กัน สืบ ๆ มา ว่า “ แต่
ครั้ง พระ เจ้า จะ ลง มา สร้าง โลก นั้น
พระ เจ้า ได้ ร้อง เรียก พวก เขา ให้ มา
ทำ บุญ และ มา อยู่ โลก รวม กัน กับ
พระ เจ้า แต่ ตัว เขา มา ไม่ ทน
เพราะ เขา มี การ เล่น ผี และ เลี้ยง ผี
อยู่ พระ เจ้า จึง ให้ ชื่อ พวก เขา
ว่า “ ยิง ” ครั้น ต่อ ๆ มา จึง ได้
เรียก กัน ว่า “ ยาง ” ฉะนั้น เขา จึง
ถือ ตัว ของ เขา ว่า ฉ่ำ สด ๆ ไม่ งาม
เพราะ เขา ไม่ มี ศาสนา และ มา ไม่
ทน พระ เจ้า สร้าง โลก.

ประเภท ที่ ๓

ว่า ด้วย ภาษา คำ พุท

VOCABULARY

คำ ตาม	คำ แปล
ไทย	English Karen
สวรรค์ ฟ้า	Heaven ฆู่ไซ่
พระอาทิตย์	Sun } มื่อ
แดด	Sunshine
พระจันทร์ เดือน	Moon ลา
ดาว	Star ฌ้า
พระอาทิตย์ ขึ้น	The sun rises มื่อเฆ่อ
พระอาทิตย์ ตก	The sun sets มื่อล่อหนี
เมฆ	Cloud ตื่อเออะ
ฝน	Rain ฆู่ไซ่จู
ลม	Wind กะลี้
ฟ้าร้อง	Thunder ลอแซ
ฟ้าแลบ	Lightning ลอโพอัด
รุ้งกินน้ำ	Rainbow เตื่อกอยล่อออกทิ
ทิศตะวันออก	East เลอมี่อถ่อ
ทิศตะวันตก	West เลอมี่อหนี
ทิศเหนือ	North เลออะ
ทิศใต้	South เลอหละ
แผ่นดิน หรือ ดิน	Earth ห่อไซ่
ทุ่ง	Plain ฌี้

คำตาม	English	คำแปล
ไทย		Karen
ภูเขา	Mountain	กะเจ้อ
ถ้ำ	Cavern	เล่อบู
หนทาง, ทาง	path	แกล
น้ำ	water	ทั
ห้วย	stream	โกล
แม่น้ำ	river	ทัพะโด่โกล
โคลน	mud	กะซี่
ฝุ่น	fine dust	} ห่อไซกะมุ
ผง ลอย } ของ	dust	
ทราย	sand	มะ
หิน ก้อนหิน	stone	เล่อคอปะลื้อ
ทอง หรือ ทองคำ	gold	บู
เงิน	silver	เง
เหล็ก	iron	ถ๊ะ
ทอง เหลือง	copper	โต
ตะกั่ว	lead	เป้อกะ
ไฟ	fire	มิอู
ควัน	smoke	ค็อ
เถ้า หรือ ขี้เถ้า	ashes	เพคล่า
ถ่านไฟ	charcoal	เส่วละ
จุด	to light a fire	ต๊วยมิอู

คำถาม

คำแปล

ไทย	English	Karen
ดับไฟ	to put out fire	ลอบมีญ
ป่า	forest	ป่ากลา
ต้นไม้	tree	เส่คอญ
รากไม้	root	เส่หัง
กิ่ง	branch	เส่ดี
เปลือก	bark	เส่ปะ
ใบไม้	leaf	เส่หละจุ
ลำต้นไม้	trunk	เส่
ดอกไม้	flower	เส่ทอ
ลูกไม้	fruit	เส่ล้า
หญ้า	grass	เหนะ
ต้นมะพร้าว	coconut palm	คอญ
ลูกมะพร้าว	coconut	คอล้า
ต้นหมาก	areca tree	มะชะญ
ลูกหมาก	areca nut	มะชะล้า
ต้นกล้วย	banana tree	สะกุกญ
พลู	betel	ลัปลั
กล้วย	banana	สะกุก
ต้นส้ม	orange tree	ตะฉี่ญ
ส้ม	orange	ตะฉี่
ต้นมะนาว	lemon tree	ปะนอเกลญ
ลูกมะนาว	lemon	ปะนอเกลล้า
ต้นมะม่วง	mango tree	ตะเคอะญ
ลูกมะม่วง	mango	ตะเคอะล้า
ต้นขนุน	jacktree	ปะหน้อยญ

คำไทย	English	คำแปล Karen
อ้อย	sugar cane	กะทิงู
ต้นพริกไทย	pepper tree	หมู่ท้อโทงู
ยาเส้น ยาสูบ	} tobacco	ยาสุ
แตงกวา	cucumber	
ข้าวโพด	maize	มือเคล้า
ถั่ว	bean	ปะทะะ
หัวหอม	onion	ปะเซอ
กระเทียม	garlic	ปะเซอว
มัน	sweet potato	แหนวะ
พริก	pimento	มู่ล้า
ข้าวเปลือก	paddy	บือเบ่า
ข้าวสาร	husked rice	ฮือละ
ข้าวสวย	boiled rice	เหม
ข้าวเหนียว	glutinous rice	ปือ
ทุ่งนา	rice field	จู้
หว่านข้าว ปลูกข้าว	to sow rice	สูบือ
ถอนข้าว ดำข้าว	to plant rice	แอะบือ
เกี่ยวข้าว	to cut rice	กูบือ
มัดข้าวเป็นพ่อน ๆ	to bind rice in sheaves	เคลยบือ
ต้มข้าว หุงข้าว	to boil rice	พอเหม

คำไทย	English	คำแปล Karen
ครกตำข้าว	to pound rice	เคื่อย้อมมือ
สากตำข้าว	rice pestle	กสิ
หม้อข้าว	ricepot	สะเปอเหม
ไร่	rai	คิ
ควาย	buffalo	ป่านา
วัว	ox	กลัดพา
วัว ตัว ภู	bullock	
วัว ตัว เมีย	cow	กลัดโหม
วัว กระตัง	sladang	ตาตุ
วัว ป่า	wild cattle	
แพะ	goat	เหมะตะมะละ
แมว	cat	ล่ามียอ
หมา	dog	คูย
เห่า	to bark	มอ
กัด	to bite	เอ
หมู	pig	เถาะ
กวาง	deer	ตะขอ
กระรอก	squirrel	หลิวทื่อ
หนู	rat	ยื่อ
หมู ป่า	wild boar	เถาะมี
ลิง	monkey	ตะอี่
เสือ	tiger	ป้อไซ

ไทย	English	คำแปล Karen
หมี	bear	ต้าซุ
ม้า	horse	กะเล่
ช้าง	elephant	กะซอ
แรด	rhinoceros	สะคลิคอ
เขาควาย	buffalo horn	ป้านาเนอ
เล็บแมว	cat's claw	ล้ามียอจีเหมะ
หางหมา	dog's tail	ฉุ่ยเหม่
เคียวหมูป่า	wild boar's tusk	เถาะมีอะเม
ผมนาม้า	horse's name	กะเล่ไซ่ซุ
งวงช้าง	elephant's trunk	กะซอกำปล้อ
ตัวผู้	male	พา
ตัวเมีย	female	โหม่
นก	bird	โถ่
ไก่ตัวผู้	cock	ซอพา
ไก่ตัวเมีย	hen	ซอโหม่
เป็ด	duck	โทติ
อีกา	crow	จ่อว่าค๊ะ
นกเขา	turtle dove	โทะหลุ่ย
ปากนก	beak	โทะเหนาะ
ปีกนก	wing	โทะติเซ
ขนนก	feather	โทะฉู่
รังนก	nest	โทะเคลอะคัลย
ไข่	egg	ติ
ออกไข่	to lay eggs	ติพะถ่อ

คำไทย	English	คำแปล
ไทย		Karen
บิน	to fly	ฟู้
ปลา	fish	ยะโพ
หอย	shell	โซละ
หูกปลา	fin	หยะติ
จระเข้	crocodile	สะหม๊ะ
กุ้ง	shrimp	สะไต้ะ
ปู	crab	แฉีว
เต่าบก	land tortoise	คลิ
งู	snake	ว๊อ
จิ้งจก	lizard	คอบเหล
จิ้งเหลน	grass lizard	ปะลัวอ
กบ	frog	เต๊ะบ๊อกกิ
คางคก	toad	เต๊ะลือ
แมลงวัน	fly	สะบ๊ิดา
ยุง	mosquito	ปะโจ
ผีเสื้อ	butterfly	จ๊อกกะเป
หนอน	caterpillar	เคลอะ
มด	ant	เต้อ
แมลงมุม	spider	กะปอ
ผึ้ง	bee	กะเนกะเนหน่อจ๋า
น้ำผึ้ง	honey	กะเนจอ
ขี้ผึ้ง	wax	กะเนโซะ
เป็นมนุษย์	human being	เป้อกา
มนุษย์ ซาด		

ไทย	English	คำแปล Karen
คนผู้ชาย	man	เปะควา
คนผู้หญิง	woman	เปะหมี่
เด็กผู้ชาย	boy	โพล่าเปะควา
เด็กผู้หญิง	girl	โพล่าเปะฮื่อ
เด็กเล็ก	child	โพล่าโฮ
คนแก่	old man	สะปะกำ
ผัว	husband	อะวา
เมีย	wife	อะมา
พ่อ	father	อะป้า
แม่	mother	อะป้า
ลูกชาย	son	อะโหม่
ลูกสาว	daughter	โพควา
หลานชายที่ ๑	grand son, nephew	โพหมี่
หลานสาวที่ ๑	granddaughter, nephew	โพโตะควา
หลานชายที่ ๒	greatgrandson	หลี่โพควา
หลานสาวที่ ๒	greatgrand daughter	หลี่โพหมี่
พี่ชาย	elder brother	แ่วจ่อ
พี่สาว	elder sister	แ่วหมี่
น้องชาย	younger brother	ฮื่อโพควา
น้องสาว	younger sister	ฮื่อหมี่คะนอ
ลูกพี่ ลูกน้อง	cousin	ดอตะควา

คำไทย	English	คำแปล Karen
ตา, ปู่	grand father	พื่อ, พะดี
ยาย, ย่า	grand-mother	พิ
ตัว	body	} อะกะจ้ำ
ร่างกาย	shape, skeleton	
หัว	head	โค
ผม	hair	ซู
หน้า	face	แหมะ
หัวกะโหลก	skull	ไคคัย
หน้าผาก	forehead	โคดาบ้อก้า
ตา	eye	แหมะคลี่
แก้ม	cheek	เบะปลา
หู	ear	หน้า
จมูก	nose	หน้าเต
ปาก	mouth	ทะไ
ฟัน	tooth	แม
ลิ้น	tongue	เปล
ขากรรไกร	chin	ข้าคลัย
หนวดที่คาง	beard	ข้าคู่
คอ	neck	เกาะ
บ่า	shoulder	ก๊วย

คำตาม	English	คำแปล
ไทย		Karen
รักแร้	armpit	กั หละปู้
แขน	arm	จ้อ
มือขวา	right hand	จ้อแม้ว
มือซ้าย	left hand	จ้อเจ๊ะ
มือ, นิ้ว	hand, finger	เนอ
เล็บ	nail	เหมะ
อก	breast	ละนบ่เปื่อกำ
นม	breast of a woman	ปู้
ท้อง	stomach	ฮื่อเพอ
สะดือ	navel	เด
หลัง, ล้นหลัง	back	เคระคลัย
เข่า, หัวเข่า	knee	ฮื่อลี้โค
ขา	leg	กัคิ
ตีน	foot	ฮื่อ
หัวแม่ตีน	big toe	ฮื่อมือ
หนัง	skin	อะปะะ
เนื้อ	flesh	ตะยะะ
ขน	hair on the body	อะจู้
กระดูก	bone	ตะคลัย
เลือด	blood	อะลู้บ
น้ำตา	tears	เหมะที

คำไทย	English	คำแปล Karen
เหงื่อ	sweat	ไก่อเปอ
นม	milk	นู้ท
น้ำปัสสาวะ	urine	ฉี่
คนจีน	Chinese	ตู่
คนไทย	Siamese	เจาะมเต
กินข้าว	to eat rice	อ้อเหม
กินน้ำ	to drink water	อ้อท
กินเหล้า	to drink spirits	อ้อช
เมา	to be drunk	แหมะฮิ
เกลือ	salt	อีล่า
พริกไทย	pepper	หมูห้วยโพ
น้ำตาล	sugar	หอก
น้ำมัน	oil, suet	โซ
เลื้อย	waist cloth	เซก้า
กางเกง	trousers	พล้อคด
ผ้าปู	loin cloth	แพ
เข็มขัด	girdle	ย้อเบอะโก๊ะ
ผ้าโพกหัว	turban	โตเผื่อ
กระดุม	button	นู้ล้า
รูกระดุม	button hole	อาปู
เกือก	shoe, slipper	คอตะเบะ

ไทย	คำไทย	English	คำแปล
			Karen
หมวก		hat	โคเก้อ
แหวน		ring	แปะชิ
ต่างหู		earring	นาคี
กำไลมือ		bracelet	จือเตโกะ
กำไลตีน		ankle-ring	ซ้อเตโกะ
สร้อยคอ		necklace	แพ
ผ้าแพร		silk	สะโต
เย็บ		to sew	ชะดำ
ทอ		to weave	ทา
ใส่เสื้อผ้า		to dress	กำเซกำ
นิคมหมู่บ้าน		village	หึปู
ฟาง		hedge	ล่อ
สวน		garden	โกดะ
บ้าน เรือน		house	หึ เตอะ
ประตู		door	แกล
หน้าต่าง		window	ตะบ้อโฮ
หลังคา		roof	เตอะโค
ไม้กระดาน		timber	เล่ปะ
ไม้ไผ่		bamboo	หะ

ไทย	คำถาม English	คำแปล Karen
หวาย	rattan	เง้
อิฐ	brick	ดินจ็อคอ
เสื่อ	mat	คล้อ
ตะเกียง	lamp	มิอูเตอ
ชุดคบ	torch	โซ
เตาไฟ	hearth	เพ็คล่าปู
ฟืน	fuel	เซมื่อ
ไม้กวาด	broom	น่อแควเล่
กระดาษ	paper	จ๊ะโค
น้ำหมึก	ink	ตะซี้ซุ
เขียน	to write	แกะ
อ่าน	to read	โป
หนังสือ	book	หลิ
เกียนเกียนกะแพะ	cart	เหล่
นำพา ขับรถ	to drive	เซอ
เรือ	canoe	คลิ
พายเรือ แกว่เรือ	to row	หวัคลิ
พาย	to paddle	หวั
กระสุน เกาทัณฑ์	bow	ซุ่นอปี

คำถาม

คำแปล

ไทย	English	Karen
มีด	knife	แมคลีะ
เลื่อย	saw	ลัะ
ขวาน	axe	กาว
ค้อน	hammer	น่อเจะเปะ
เสียม	spade	มอกะซื่อ
ไถ	plough	แม่
วัน	day	นี่
คืน	night	ตะนา
เวลาใกล้รุ่ง	dawn	บู่ม่อเผ่
เช้า	morning	งวอ
เที่ยง	noon	มื่อซู่
บ่าย	afternoon	มื่อเคิ้ลลอ
เย็น	evening	คื่อ
เดือน	month	ตะลา
ปี	year	ตะนี่
ปีกลาย	last year	โมโฮ
ปีหน้า	next year	แมคยา
เมื่อวานนี้	yesterday	ลีมื่อฮยา
เมื่อวานขึ้นนี้	the day before yesterday	ละตะฮยา
วันนี้	to-day	มื่อซาอี่

คำ ตาม		คำ แปล
ไทย	English	Karen
พรุ่งนี้	to-morrow	เล็ฮังวอ
มะวันนั้	the day after to-morrow	แม็คตะหวอ
ฤดูหนาว	cold season	ตะเมงอคา
ฤดูแล้ง	hot season	ตะโก้คา
ฤดูฝน	rainy season	ตะจู้คา
ไป	to go	แล
มา	to come	ซะเก
ขี่ม้า	to ride	โต๊เกะเล็
เดิน	to walk	แล
วิ่ง	to run	จี้
ลุกขึ้น	to rise	แมงเอ้อ
ยืน	to stand	แมซเอ้อ
นั่ง	to sit down	ซึ้นอ
นอน	to lie down	} มินอ
นอนหลับ	to sleep	
ตื่น	to awaken	ฟี่ละโนะ
ปลุก	to wake	แบะ
เห็น หา	to see	คี่ ถี้
ได้ยิน	to hear	หนัฮู
เสียงดัง	noise	อาซอ
ดม	to smell	เนว
กลิ่นหอม	to smell sweet	ปี่เนอฮู
กลิ่นเหม็น	to smell evil	ปี่เนอฮิ

ไทย	คำ ตาม English	คำ แปล Karen
พูด	to speak	มต
ร้องเพลง	to sing	มาทา
หัวเราะ	to laugh	นี่
ร้องไห้	to weep	ห่อ
ร้องตะโกน	to cry	ก็
ถ่มน้ำลาย	to spit	อุเกวระ
ไอ	to cough	กู๋
หาว	to yawn	สกอ
หิว	to be hungry	ล่อแป
หิวน้ำ ขยากน้ำ	to thirst	สมุ่่อที
ดูด	to suck	จู่
อาบน้ำ	to bathe	บ่อลือที
ล้างหน้า ล้างมือ	to wash (face, hands)	ปล่านหมะเซจื่อ
หวี	comb	ลั
หวีผม	the comb the hair	คุยโซ่
โกน	to shave	หลู่
มีความสุขสบาย	to be in good health	โอหมี่
เจ็บป่วย	to be ill	ซา
ไข้	fever	ต่ากะบี
ลงท้อง	diarrhoea	ลู
ไปถ่ายอุจจาระ	to stool	แมเอ่ซา

ไทย	English	คำแปล Karen
ไปถ่ายปัสสาวะ	to urinate	ฉี่ ขี้
โรคห่า	plague	ป่าดำ
โรคคลงกร	cholera	ตาอุบ๊ะ
ฝีดาษ	small-pox	ตาชาด๊ะ
หมอ	medicine man	สละ
ยา	medicine	ตาลี
ตาบอด	blind	เหมะเบ๊ะ
หูหนวก	deaf	น้ำตะเออ
ใบ้	mute	อะงว้อ
ขาเลี้ย ขาชะเผลก	lame	ขาตะแมล
หลังโก่ง	hunchback	ตุฏ
เกิด	to be born	โง๊ะ
ตาย	to die	ตุ้
ฝังคนตาย	to bury the corpse	ซูลอ
เผาคนตาย	to burn the corpse	กล้อปลั
กลัว	to be afraid	ปลั
ขโมยลัก	to steal	ต่าบลิ๊ะ
ฆ่า	to kill	มาชี
ขาว	white	วา
ดำ	black	ชู่
เหลือง	yellow	บอ

คำถาม	English	คำแปล
เขียว	green	ลาละลดู
แดง	red	ว้อ
เขียวฟ้า	blue	ลาต่าเออ
สิ่งนี้ นี่ นี่	this	อ่าอี้
หญิงคนนั้น	that woman	ป้อม้อต่ากาเห
คนนี้	this man	ป้าต่าก่าอี้
สิ่งนั้น นั่น	that	อ่าเห่น
ฉัน แกฉัน	I, me	ก่าจ่า
บิดาของฉัน	my father	อ่าป้ายา
ลูกของเรา	our child	อาโพยา
ต้นไม้สูง	a high tree	เล่ทะทอ
ต้นไม้ ต้นนี้สูงกว่า ต้นนั้น	this tree is higher than that	เล่ตะถู่ทอเตะ
ต้นมะม่วงต้นนี้เป็น ต้นที่สูงกว่าหมดใน สวน	this mango tree is the highest in the garden	ตะเตะดอถู่ตาดะ ปูทอหะ
ฉันไปตลาด	I am going to the market	แลหะเหมะกะปู
ฉันมาจากตลาด	I come from the market	แลหะเหมะกะปู หะเก

คำถาม		คำแปล
ไทย	English	Karen
พรุ่งนี้ฉันจะไปในป่า	to-morrow I shall go into the forest	เลอว्हอแมลป่าคลา
วานนี้ฉันได้ไปในป่า	yesterday I was in the forest	หมี่ชายาแมลป่ากลา
หน้าบ้าน	in front of the house	ฮั่มเมยา
หลังบ้าน	behind the house	ฮั้โ
ใครมา	who comes ?	หมะต่ากาแฮ
ถ้าฉันหาย	if I recover	หู่ยาเกะปลา
ใช่	yes	เออ
ด้วยกัน	together	ดึโ
หนึ่ง	one	ตะถึ
สอง	two	คัถึ
สาม	three	เซอถึ
สี่	four	หลุ่ยถึ
ห้า	five	เมหฺยถึ
หก	six	คัถึ
เจ็ด	seven	นุ่ยถึ

คำตาม	คำแปล
ไทย	English Karen
แปด	eight โคะถဲ
เก้า	nine คุยถี่
สิบ	ten อ่าถี่ตำซึ
สิบเอ็ด	eleven ตะซึตำถี่
สิบสอง	twelve ตะซึคี่ถี่
สิบสาม	thirteen ตะซึเซอถี่
สิบสี่	fourteen ตะซึหลู่บถี่
สิบห้า	fifteen ตะซึมเหยถี่
สิบหก	sixteen ตะซึคี่ถี่
สิบเจ็ด	seventeen ตะซึนุบถี่
สิบแปด	eighteen ตะซึโคะถี่
สิบเก้า	nineteen ตะซึคุยถี่
ยี่สิบ	twenty คี่ซึ
ยี่สิบเอ็ด	twenty-one คี่ซึตะถี่
สามสิบ	thirty เซอว์ ซึ
สี่สิบ	forty หลู่บซึ
ห้าสิบ	fifty มเหยซึ
หกสิบ	sixty คื่อซึ
เจ็ดสิบ	seventy นุบซึ
แปดสิบ	eighty โคะซึ
เก้าสิบ	ninety คุยซึ

คำตาม		คำแปล
ไทย	English	Karen
ร้อยหนึ่ง	one hundred	ตะก่าอย่า
ร้อยกับหนึ่ง	one hundred and one	ตะก่าอย่าต่ำถึ
สองร้อย	two hundred	ดิก่าหย่า
สามร้อย	three hundred	เซอว์ ก่าหย่า
สี่ร้อย	four hundred	หลุ่ยก่าหย่า
ห้าร้อย	five hundred	เมหย่าก่าหย่า
หกร้อย	six hundred	คิก่าหย่า
เจ็ดร้อย	seven hundred	นุยก่าหย่า
แปดร้อย	eight hundred	โคะก่าหย่า
เก้าร้อย	nine hundred	คุยก่าหย่า
พันหนึ่ง	one thousand	ต่ำกะโทะ
หมื่นหนึ่ง	ten thousand	ต่ำกะซึ
แสนหนึ่ง	hundred thou- sand	ต่ำกะซึต่ำซึ

นิทาน เรื่อง ที่ ส่ง ไป ให้ แปล

The Parable of the Prodigal Son-in Karen.

โอะโอะคะตะกำ อะโอะโอะคะคีกำ อะโอะโอะคะตะแกโอะปาเตตะกำ ป้าเฮอะเคอะ
 ค่อเมโอะเฮอะยะตะนอ อะป้าเฮอะเลอะ อะโอะโอะคะค่อกาปุกาปุกา อะเมอะเจอะตะ
 ยี่น้า โอะโอะคะกะฮี่อะคะเคอะลี่ เหล่หะ เหล่ตื่อเก๋อຍီตะเก๋อມီอ ปุ่ตะทาเหลอะ
 จอะตะเห่นตำนอມိ้น้า ตะเจຍးນ้า เปຍตำเหลอะลี่ เย่ຍပ္ပိုမ်กำชาวี ปา
 ตำกาชาวีเมเปຍอตำโอะนอມိ้น้า ปาชาวีตำกำเห่นแกโอะอะเว่ຍပ္ပိုตำกำหนี่ ปา
 ตำกาเมอะแก เลอะຈັပ္ပိုเลຍบือเกาะ ปาตำกำแกຕີเกาะชาละอะอ้อ เกาะชาเปຍ
 หือเผื่อปาตะหือล่อนอตำกำน้า เลอะอะคะฮီໄໝ່ຕີอะປ້າเคอะอะแบ่ລໍອາກໍ
 ตาอะอะตาอ อแบ่ລໍอะอะแบ่ລໍอ้อ โอะໄໝ່ຕີอะຈັງເລຍເມ່ເກໄໝ່ ป້າເກເຍ່ນຸ່ມ
 ນອ ໆ “ ພິຕ້າຕ້ອພິເລຍປ້າ ” ຕາເກອເກເລຍປ້າອະໂພປ້າ ໂອເກຍປ້າເມອ
 ປະກ້າ ” ໄໝ່ເມ່ຍຸລີເກໂອເລຍປ້າ ອະປ້າຕີອະໂພອະເກະເກຍອ ຕີອະໂພເລ
 ເຈອະໂພເນອມຸຊະຫີຊະເອ ອະໂພເຕ “ ພິຕ້າຕ້ອພິເລຍປ້າ ຕະເກອເກ
 ເລຍປ້າໂພປ້າ ” ອະປ້າເມອອະເບັດເລຍເອຍີ ຍະອະເຍເອເອະໂພຍີບະຫີ
 ເອະຈັຈີ ສີ່ອໍພິເອເອະສີ່ຕ້ອໂພອະເບະເມາຈີເອໂພອໍ ມີອະຊະຕະປຸກອເລຍອະ
 ໂພຈີຸຍຸລີເກເອກະເຕະ ອະໂພສາມາເພະອາເກຕີອະເມະເກະເຕະ ເລຍອະກາໝີ
 ອໍເມະເກະເກະ ເຕອະອະໂພເຕອະປ້າ ອະໂພກາອະເວໂໂໄໝ່ເລຍຈີສາ ເກນ້າສູບ
 ວາມາຫາເກະອະເບັດເອຍີຈັກວ່າ ຕ່າມາໄວ້ມາຕາຕ່າມີແລ້ ອະເບັດເຕຍີະນະປີອ
 ອາເກລີ ອະນ້າມາຈີຕ້ອໂພອະເບະເອອະປີອສາເກອໍ ອະເວໂໂກຊະຕໍເລຍອະ
 ຊະຕະນິອສິນ້າ ຕ່າມາເອຕໍດີໝີ ອາປ້າເຈອະປ້າເອໂໝ ໆ ນອ ໆ ອະໂພ
 ເຕະ ອານ້າໂອຕັບລີອໝີລີ ອະປີຕະໂວ້ນອະລອນ້າ ປ້າຕະເອເມະຕະເລຍອະ

โพปานอดิอนะ เลอะโผมาตะเกย อาเกตีกาเปะหมือ อาป้ามาชี้ตำตื้อ
โพอาเบะเฮ่แหว่อ้อ โพอู้โตอป่าเกาะ มะหนึ่นักตะเลตะมาชี้บ้ำมะตาแล เล่อ
อาป้อลอป๊ะชี้ตะชีน้ำอาเกทีลอมะ.

นิทาน ชาติ ของ เขา A Karen tale

ปาตะกาเลตอมีปามือกระนอเลตือปะตุที่มีมือกระนอป่าเจอลอ แจคติ
 อาเวมาส่วยป่าต่าค่าเตมา ต่าเล่คลิเออ์นั้นาอะเวจิชะมาตะเก มือกระนอ
 อาป่าเตโพมื่อมะตะซ้อ เลอโตโซเลอป่า แกะอะเลกว่าอาเวจิอาว่า
 ซอเตะคลิเปาะมือกระนออาป่าทะโซแมเปะจอ.

แปล เป็น ภาษา ไทย Siamese translation

มี ชาย คน หนึ่ง ไป เที่ยว ที่ เวียน สาร ใน ะณะ นั้น เมอญี พ่อของ
 ผู้สาว ได้ เตา มา ตัว หนึ่ง จึง เอา เตา นั้น ผูก ไว้ ที่ าน เวียน ครั้น
 ชาย ผู้ นั้น ไป ถึง บ้าน ผู้สาว จึง เอา หู ตะเคง เข้า ฟัง ที่ ช่อง ฝา ที่ เขา
 ผูก เตา นั้น ไว้ เตา ก็ ตกใจ จึง ร้อง เสียง ฟ่อ ๆ ชาย ผู้ นั้น ไม่ ทน
 สังเกต ว่า อะไร และ ไม่ได้ ยืน ถนัด สำคัญว่า ผู้สาว มา พุด ด้วย จึง ตะเคง
 หู เข้า ไป ฟัง จน ไกล ช่อง ที่ เขา ผูก เตา ไว้ นั้น เตา ก็ ตกใจ จึง อ้า
 ปาก กัด หู ชาย ผู้ นั้น ชาย ผู้ นั้น สำคัญ ว่า ผู้สาว หยอก จึง พุด แต่ เบา ๆ
 ว่า เจ็บ ๆ แต่ เตา ก็ หา ปล่อย ไม่ ชาย ผู้ นั้น จึง ดิ้น และ พลง กระ
 ซาก หู ของ ตน ออก มา เตา ก็ ตีต มา ด้วย ใน ทัน ไต นั้น พ่อ ของ ผู้
 สาว ได้ ยืน เข้า จึง พุด กับ ลูก ว่า เสียง อะไร ดัง ฟู ๆ และ เจ็บ ๆ อยู่ ที่
 ไต ฤณ จึง ร้อง ลง ไป ดู ใน ทัน ไต นั้น ชาย ผู้ นั้น ตกใจ จึง กระซาก หู
 ของ ตน ออก มา จาก ช่อง ฝา เตา ที่ กัด หู อยู่ นั้น ก็ ตีต มา ด้วย แต่
 โดย น้ำ หนัก ของ ตัว เตา มี ถ่วง อยู่ ที่ หู ของ ตน ชายผู้ นั้น จึง สลัด ศีรษะ
 ของ ตน โดย กำลั้ง แร่ หู ก็ ขาด เตา ที่ กัด หู อยู่ นั้น จึง กระเด็น ไปถูก
 ปาก พ่อ ของ ผู้สาว โดย กำลั้ง แร่ ปาก แตก และ ฟัน ก็ หักหมดทั้งปาก.

English Translation.

A man went visiting to the house of a girl. Now it happened that at that time the girl's father had brought a tortoise and tied it on the veranda of the house. When the man reached the girl's house he put his ear up against a hole in the wall just where the tortoise was tied in order to listen. The tortoise was scared and shouted lustily. The man did not realize what it was and thought it was the girl speaking, so he put his ear right up against the opening where the tortoise was tied. The tortoise being scared opened its mouth and bit the man's ear, but he, thinking it was the girl playing a joke with him, just spoke softly saying: "it hurts, it hurts", but the tortoise did not let go. The man then began to wriggle and to drag his ear away but the tortoise came with him. Just then the girl's father heard and said to his daughter: "what is the noise under the house ugh, ugh, it hurts, it hurts?" And he ran down to see. By that time the man was frightened and had pulled his ear away from the opening but the tortoise, still biting him, came along with it and the weight of the tortoise hung on to the ear, so the man shook his head vigorously till the ear was torn away; the tortoise rebounded and hit the girl's father hard on the mouth and broke his teeth and his mouth.

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THYSANOPTERA FROM SIAM AND INDO-CHINA.

COLLECTED BY MR. W. DOCTERS VAN LEEUWEN.

By H. H. KARNY, Buitenzorg, (Java).

In the following paper are considered the Thysanoptera, collected by Mr. W. DOCTERS V. LEEUWEN in the year 1920, both gall-forming species, and flower-thrips. It seemed to be useful to treat the Siamese Thysanoptera and those from Annam and Cochin-China together, because forms, hitherto only known from one of these countries, may be found in the others in the future; it is not to be expected, that the Thysanopterous fauna of these countries should be very different.

From the territory here treated, only two species of Thysanoptera were hitherto recorded, so far as is known to the author, namely *Dinothrips sumatrensis* BAGNALL (from Tonkin) and "*Panarthrips grancilis*" BAGNALL (from Siam). All other species enumerated below are new for these countries and 17 of these must be considered as new species. Our knowledge of the Thysanoptera of Further India is thus greatly increased by the collections of Mr. DOCTERS V. LEEUWEN, and I am very much indebted to him for entrusting this very interesting material to me for study.

SUBORDER TEREBRANTIA HALID.

Family Thripidae UZEL.

Sub-family Sericothripinae KARNY.

1. *Scirtothrips angusticornis* n.sp. (Fig. 1.).

Female.—General colour brownish black. Fore femora yellowish brown; middle femora a little darker, with distinctly pale knees; hind femora black, but distinctly pale at base and knee. All tibiae and tarsi yellow. Antennae yellow, with the two first joints lightest, the third and fourth shaded with grey at apex, fifth in the

distal half and the following nearly wholly grey-brown. Fore wings dark, with a clear cross band near the base, reaching from the end of scale to the end of first-third of their length.

Head very short, one-half broader than long, with large, blackish eyes, occupying nearly the whole length of head. Mouth-cone in the lateral view pointed; maxillary palpi slender, distinctly more than half as long as the mouth-cone, with two long joints equal in length and a third shorter one at base. Labial palpi as long as the apical joint of the maxillary ones, with a very short annular segment at base and long, slender segment at apex.

Antennae very long and slender, nearly 5 times as long as the dorsal surface of head. First joint only a little wider than long. second cup-shaped, as broad as the first, nearly twice as long as wide. Third segment fusiform, with the distal constricted part sub-cylindrical, at the insertion of bristles as wide as the preceding joints, nearly three times as long as wide. Fourth antennal segment of a similar form to the third, equally long but a little narrower. The two following joints still narrower, about cylindrical, but the fifth narrowed basally, the sixth apically; the sixth shorter than 3 and 4, the fifth still shorter, but nevertheless three times as long

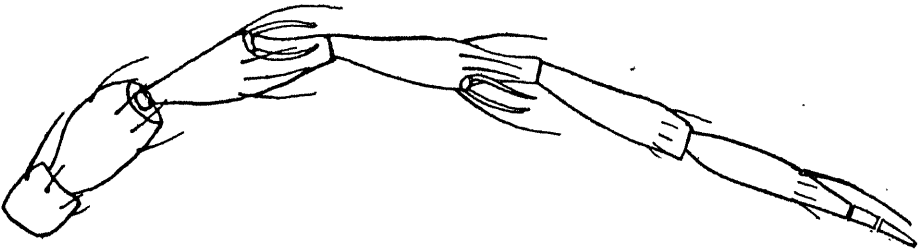


Fig. 1. Antenna of *Scirtothrips angusticornis* n. sp.

as wide. Style slender, a little shorter than half of the preceding segments; its apical joint longer than the basal.

First antennal segment with a long bristle at its inner surface; second with a shorter one near base and with a crown of stronger bristles near apex. Third joint with long, strong setae behind the middle, and close behind these at the anterior margin with a fork-shaped arrangement of sense-cones, reaching about to the

apex of the joint. Fourth segment with the bristles and sense-cones as in the preceding joint, but the latter inserted at the posterior margin. Segment 5 and 6 with a crown of weaker bristles, only one at the anterior margin longer and stronger.

Prothorax one and a half times as long as the head, with a stout spine at each hind angle, and a few shorter and weaker bristles scattered over the surface. Disc striate with distinct, transverse wrinkles. Fore and middle femora stout; tibiae constricted at base, and set with a few bristles at apex; neither tibiae nor tarsi with a tooth. Hind legs longer and slenderer, with very long, bristle-bearing tarsi.

Pterothorax a little wider than long; the sides of meso- and metathorax arched. Wings reaching about to the end of abdomen; fore pair distinctly colored, with long fringe and very weak bristles, of which there are 4 on the fore margin of the scale, a continuous series of about 30 on the anterior vein, and only two on the posterior vein (in the distal half).

Abdomen very broad, subglobular in the basal half, and conically pointed in the distal part. All segments at their hind angles set with long bristles; those of the apical segments especially long and stout.

Measurements :—Total length of antennae 0'34 mm. I. joint 0'02 mm. long, 0'025 mm. wide; II. joint 0'045 mm. long, 0'025 mm. wide; III. joint 0'07 mm. long, 0'025 mm. wide; IV. joint 0'07 mm. long, 0'02 mm. wide; V. joint 0'05 mm. long, 0'015 mm. wide; VI. joint 0'06 mm. long, 0'015 mm. wide; VII. joint 0'01 mm. long, 0'005 mm. wide; VIII. joint 0'015 mm. long, 0'005 mm. wide. Head 0'07 mm. long, 0'11 mm. wide. Prothorax 0'10 mm. long, 0'17 mm. wide. Fore femora 0'15 mm. long, 0'04 mm. wide; fore tibiae (including tarsi) 0'22 mm. long, 0'03 mm. wide. Pterothorax 0'20 mm. long, 0'25 mm. wide. Middle femora 0'14 mm. long, 0'04 mm. wide; middle tibiae (including tarsi) 0'22 mm. long, 0'03 mm. wide. Hind femora 0'18 mm. long, 0'035 mm. wide; hind tibiae (including tarsi) 0'30 mm. long, 0'03 mm. wide. Length of wings (without fringe) 0'65 mm. Abdomen 0'55 mm. long, 0'26 mm. wide. Total length 0'9 mm.

I have in the material before me only one (female) specimen of this very remarkable species, collected by Mr. DOCTERS v. LEEUWEN in flowers of *Desmodium* spec. (No. 46) together with a *Taeniothrips longistylus*, at Bang Saphan Yai (Southern Siam), dated 12. X. 1920.

I place this aberrant form with some doubt in the genus *Scirtothrips* SHULL. It differs from all species of this genus at once by the extraordinarily long and slender antennae and by the dark colour of body; diverging from *Sericothrips* by the presence of posterolateral prothoracic bristles, from the Thripinae by the posterior vein of fore wings nearly abortive, set only with two weak bristles. Perhaps it should form a new genus.

Subfamily Thripinae KARNY.

2. *Frankliniella vicina* n.sp.

Female.—Head and thorax light yellowish brown, abdomen dark, blackish brown. Legs pale, yellow. The two first antennal joints of the same colour as head, the following pale yellowish-grey, nearly clear, but a little darker-grey at apex; sixth segment and style dark. brownish-grey. Wings clear.

Head twice as broad as long; eyes black, more than half as long as head. Dorsal surface with a pair of short, stout postocellar bristles. Front below the insertion of antennae with a pair of long, downwards directed bristles. Mouth-cone short and blunt. Maxillary palpi inserted near its base, reaching to its tip; their two basal segments nearly equal in length, the first widest, the third longest and narrowest. Labial palpi a little longer than the apical joint of the maxillary ones, with a very short annular segment at base, and a long, slender one at apex.

Antennae stout, nearly three times as long as the dorsal surface of head. First joint very small, a little wider than long, nearly parallel-sided. Second segment cup-shaped, twice as wide as the first, and distinctly longer than broad. Third joint broadly fusiform, a little shorter and narrower than the preceding one. Fourth segment of a similar shape, but distinctly slenderer, narrower and longer than the third. Fifth joint short, narrowed at base, transversely truncate at apex. Sixth segment longer than each of the preceding ones, fusiform, widest near the base, somewhat broadly united with

the fifth, gradually tapering to apex. Style short; its two joints equal in length, a little longer than broad.

Second, third and fourth antennal segments with a crown of long, stout spines near apex; the usual sense-cones of 3 and 4 short and stout.

Prothorax a little longer than head, distinctly wider than long. All bristles very long and stout; the anterolateral pair about half as long as the prothorax, the anteromarginal ones a little shorter. Each hind angle with two bristles, equal in length, and distinctly longer than the anterolateral ones; posteromarginal pair half as long as the posterolateral ones. Fore legs very stout, their femora about twice as long as broad; tibiae a little narrower, with some stout spines at the end. Tarsi distinctly two-jointed, without teeth.

Pterothorax scarcely broader than long, with two very long bristles near the insertion of fore wings. Middle and hind legs long and stout; their femora and tibiae thickened in the distal part; the latter ones with a row of strong bristles at the outer, and a similar row of shorter and stouter ones at the inner margin; a long, thick, black spine at apex. Tarsi slender, distinctly articulated, with a few bristles near the middle.

Fore wings reaching about to the base of eighth abdominal segment, clear, with moderately long fringe and strong bristles; those of the fore margin only a little shorter than the breadth of the wing, those of the veins distinctly shorter. About 20 bristles on the costa and on the anterior vein, 12 on the posterior vein, and 4 on the scale.

Abdomen about as wide as pterothorax, three times as long as broad, tapering to the tip. All segments with moderately long bristles at their hind angles; those of the ninth and tenth segment very long and stout, longer than the segments themselves. Ovipositor distinctly curved downwards, with strongly serrate margins, overreaching a little the tip of the last abdominal segment.

Measurements of female:—Total length of antennae 0.22 mm. I. joint 0.01 mm. long, 0.015 mm. wide; II. joint 0.04 mm. long, 0.03 mm. wide, III. joint 0.035 mm. long, 0.025 mm. wide; IV. joint 0.04 mm. long, 0.02 mm. wide; V. joint 0.03 mm. long

0.015 mm. wide; VI. joint 0.05 mm. long, 0.015 mm. wide; VII. joint 0.007 mm. long, 0.005 mm. wide; VIII. joint 0.007 mm. long, 0.003 mm. wide. Head 0.08 mm. long, 0.16 mm. wide. Prothorax 0.11 mm. long, 0.18 mm. wide. Fore femora 0.10 mm. long, 0.05 mm. wide; fore tibiae (including tarsi) 0.11 mm. long, 0.035 mm. wide. Pterothorax 0.20 mm. long, 0.18 mm. wide. Middle femora 0.11 mm. long, 0.045 mm. wide; middle tibiae (including tarsi) 0.13 mm. long, 0.035 mm. wide. Hind femora 0.15 mm. long, 0.045 mm. wide; hind tibiae (including tarsi) 0.19 mm. long, 0.035 mm. wide. Length of wings (without fringe) 0.65 mm. Abdomen 0.65 mm. long, 0.20 mm. wide. Total length 1.0–1.1 mm.

Male.—Distinctly smaller than female. Head and thorax of the same colour, but abdomen paler, light greyish-yellow. Third antennal segment comparatively longer than in female. Bristles of the last abdominal segment still longer; no tooth-like spines. Testes orange-yellow, situated in the seventh and eighth abdominal segments. Penis sharply conical, slender, over reaching the tip of abdomen.

Measurements of male.—Total length of antennae 0.21 mm. I. joint 0.01 mm. long, 0.015 mm. wide; II. joint 0.03 mm. long, 0.025 mm. wide; III. joint 0.04 mm. long, 0.02 mm. wide; IV. joint 0.045 mm. long, 0.02 mm. wide; V. joint 0.03 mm. long, 0.015 mm. wide; VI. joint 0.045 mm. long, 0.015 mm. wide; VII. joint 0.005 mm. long, 0.005 mm. wide; VIII. joint 0.005 mm. long, 0.003 mm. wide. Head 0.07 mm. long, 0.13 mm. wide. Prothorax 0.10 mm. long, 0.16 mm. wide. Fore femora 0.10 mm. long, 0.05 mm. wide; fore tibiae (including tarsi) 0.11 mm. long, 0.035 mm. wide. Pterothorax 0.20 mm. long, 0.18 mm. wide. Middle femora 0.09 mm. long, 0.04 mm. wide; middle tibiae (including tarsi) 0.14 mm. long, 0.035 mm. wide. Hind femora 0.14 mm. long, 0.045 mm. wide; hind tibiae (including tarsi) 0.15 mm. long, 0.035 mm. wide. Length of wings (without fringe) 0.55 mm. Abdomen 0.45 mm. long, 0.16 mm. wide. Total length 0.8 mm.

This species was collected by Mr. DOCTERS v. LEEUWEN at Mour Man, in flowers of *Celosia argentea* L. (No. 76), dated 26. X. 1920 (together with *Hoplothrips soror*).

It comes in my determination table (Zool. Ann. 1912, pp. 334-336) nearest to *Fr.breviceps* BANGNALL (England), in WATSON's key to the American species (Florida Buggist, June 1919, p. 3), to *Fr.runneri* MORGAN. But *breviceps* has the thorax dark, and *runneri* differs by the coloration of antennae and wings. The Australian *Fr.trybomi* KARNY has also differently colored antennae, and the body a little paler. *Fr.nigriventris* UZEL (Central Europe), finally, has wings distinctly shorter, either entirely rudimentary, or not overreaching the sixth abdominal segment.

3. *Frankliniella persetos* *n.sp.*

Female.—General colour uniformly dark brown; legs a little paler. Antennae of the same colour as body, only the third segment most a very little paler. Fore wings shaded with greyish.

Head hardly broader than long, with straight parallel cheeks. Eyes black, occupying a little more than the half of length of head. Behind them on each side a stout postocular bristle, and a similar pair behind the posterior ocelli. Anterior ocellus directed forwards between the insertion of antennae. Front with some short hairs, and with two pairs of stout, downwardly directed bristles, one below the insertion of antennae, the other close to the base of mouth-cone. The latter short and blunt, maxillary palpi shorter than in the preceding species, their joints of the same shape as there. Labial palpi as in *vicina*.

Antennae twice as long as head, stout. First joint very small, a little wider than long. Second segment cup-shaped, broader than the first, distinctly longer than wide. Third joint of a similar shape to the preceding, but a little narrower. Fourth segment fusiform, as wide as the third, but longer. Fifth joint as long and broad as the third, narrowed at base, transversely truncated at apex. Sixth segment as long as the fourth, fusiform, widest near the base, somewhat broadly united with the fifth, gradually tapering to apex. Style shorter than the half of the sixth joint, but longer than in the preceding species; its basal segment as long as wide, the apical one longer and narrower.

Segments 1—5 with a crown of stout bristles before the apex. Sixth segment with a few bristles near the middle; style only with a

few weak hairs. Sense-cones of the third and fourth joint stout and short, but distinctly overreaching the end of their segments, of the usual shape.

Prothorax as in the preceding species. Fore legs a little longer and distinctly slenderer; tarsi and spines of tibiae as in *vicina*.

Pterothorax hardly longer than wide, with straight sides converging backwards. Sutures of mesosternum formed as an inverted T, these of metasternum Y-shaped. Hind coxae somewhat larger than the middle ones, closer to one another. Middle and hind legs practically as in the preceding species.

Fore wings reaching to the sixth abdominal segment, somewhat shaded with grey, with moderately long fringe and extraordinarily long and stout bristles. 16 on the fore margin, nearly as long as the breadth of the wing; 14 on the anterior vein, only a little shorter; 11 on the posterior vein, nearly as long as those of the costa. Scale with 5 bristles. Hind wings greyish, a little paler than the anterior pair; their vein darker only in the basal part.

Abdomen long and slender, only a little wider than the pterothorax, three and a half times as long as broad, gradually tapering to the tip, bluntly conical at apex. All segments with a strong bristle at each hind angle and with a few smaller ones along the posterior margin. The two last abdominal segments with very stout and long setae, longer than the segments themselves. Ovipositor shaped as in *vicina*, but hardly reaching to the tip of abdomen; its base at the fore margin of the eighth abdominal segment.

Measurements.—Total length of antennae 0'22 mm. I. joint 0'15 mm. long, 0'02 mm. wide; II. joint 0'035 mm. long, 0'025 mm. wide; III. joint 0'035 mm. long, 0'02 mm. wide; IV. joint 0'04 mm. long, 0'02 mm. wide; V. joint 0'035 mm. long, 0'02 mm. wide; VI. joint 0'04 mm. long, 0'02 mm. wide; VII. joint 0'01 mm. long, 0'01 mm. wide; VIII. joint 0'015 mm. long, 0'005 mm. wide; Head 0'11 mm. long, 0'12 mm. wide; Prothorax 0'13 mm. long, 0'17 mm. wide. Fore femora 0'12 mm. long 0'04 mm. wide; fore tibiae (including tarsi) 0'13 mm. long, 0'035 mm. wide. Pterothorax 0'23 mm. long, 0'22 mm. wide. Middle femora 0'10 mm. long, 0'035 mm. wide; middle tibiae (including tarsi) 0'13 mm. long, 0'03 mm. wide. Hind femora 0'12 mm. long, 0'03 wide; hind

tibiae (including tarai) 0'19 mm. long, 0'025 mm. wide, Length of wings (without fringe) 0'65 mm. Abdomen 0'8 mm. long, 0'24 mm. wide. Total length 1'2 — 1'4 mm.

Two females from Susrasthra Dani (Southern Siam) collected by MR. DOCTORS V. LEEUWEN in flowers of *Ipomoea* spec. (No. 44), together with *Thrips japonicus*, dated 1 X 1920.

This species is closely allied with *Fr. nervosa* UZEL (Europe and North America), but diverging from it and also from *insularis* FRANKLIN, by the uniformly colored antennae. The Australian *Fr. trybomi* KARNY is distinctly paler, and has the head constricted backwards, and the fore wings clearer. *Fr. persetososa* is at once distinguished from the preceding species by the dark head and thorax.

4. *Taeniothrips longistylus* n.sp. (Fig. 2).

Female.—General colour dark brown. Fore legs and all tarsi greyish-yellow; fore femora at the outer margin darker, brown; fore tibiae shaded with grey. Antennae uniformly dark grey brown, but the third joint paler, yellowish grey. Fore wings dark grey-brown at extreme base and the scale, then in the first third broadly clear, transparent, further greybrown, with a clear cross-band in the distal part; apex dark.

Head one and a half times as wide as long; cheeks nearly straight, slightly granulated, subparallel. Eyes black, occupying a little more than half of the length of head, with some very short hairs between the facets. Ocelli large, with red pigment-cups, arranged in a rectangular triangle, the anterior one placed near the middle of eyes, directed forwards; the posterior ones a little before the hind border of eyes, directed upwards. Dorsal surface of head with a pair of long, stout postocellar bristles, and a very short, weak, forwardly directed hair behind the eyes on the cheeks. Occiput with a very fine, transverse striation.

Antennae a little more than twice as long as the head, slender. First joint broad, cylindrical, one and a half time as wide as long. Second segment cup-shaped, twice as long as the first, and a little narrower than it. Third joint broadly fusiform, as wide as the second, and as long as the two preceding ones together.

Fourth segment of the same size as the third, a little more constricted apically. Fifth joint very small, distinctly narrower than the

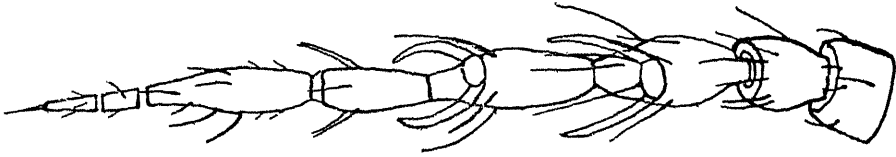


Fig. 2. Antenna of *Taeniothrips longistylus* n. sp.

preceding ones, three times as long as wide, but only a very little longer than the second, nearly fusiform, but transversely truncate at apex. Sixth segment slender, fusiform widest before the middle, nearly as long as the third, but distinctly narrower. Style long and slender, nearly half as long as the preceding joint; its apical segment longer and more slender than its first.

First joint with a crown of short, weak bristles near the end. Second segment with a similar arrangement of longer and stouter setae. Third joint with strong bristles in the distal half, and with the usual fork-shaped pair of sense-cones, reaching to the end of first third of the following segment. This with a crown of long, stout bristles behind the middle, and with the sense-cones a little shorter and more curved than those of the preceding joint. Fifth segment with some bristles in the distal part. Sixth joint with a transverse row of bristles near the middle, before them only some very short hairs, behind them a few short bristles. Style with weak, short hairs and two longer and stouter ones at apex.

Front with two pairs of downwardly directed bristles, one below the insertion of antennae, the other before the base. Mouth-cone bluntly conical, reaching to the middle of prosternum. Maxillary palpi three-jointed, about three-fourths as long as the whole mouth-cone; the first joint widest and longest, nearly as long as the two others together; these about equal in length, the third still narrower than the second. Labial palpi very slender, distinctly narrower and somewhat longer than the last maxillary-palpal joint.

Prothorax transverse, ovate, a little longer than head, and distinctly wider than long. At each anterior angle a small, forwardly

directed bristle; at each posterior angle two long and stout bristles, equal in length, and about half as long as the prothorax. Fore coxae ovate. Fore legs stout; their femora thickened; tibiae with some hairs along the outer margin, and with a few stout setae at the end, especially on the inner side. Tarsus slender, two-jointed, with a few hairs, but without tooth.

Pterothorax distinctly wider than prothorax, somewhat longer than broad; sides of meso- and metathorax arched, somewhat converging behind. Suture of mesosternum as in *Frankliniella persetosae*, that of metasternum X-shaped. Middle and hind coxae subglobular, rounded; the latter distinctly larger and much closer to one another than the former. Middle and hind legs long and stout; chaetotaxy as in the fore legs, but the apical spines of all tibiae still stronger.

Wings reaching to the seventh abdominal segment, fore pair with distinct cross-bands. Fringe long, bristles long and stout. Costa with about 25 bristles; anterior vein with 14 from base to the apical third; the apical clear cross-band without bristles on the anterior vein, then two in the dark apical part. Posterior vein with about 14 bristles, equidistant throughout its whole length, 4 of them in the apical clear cross-band. Scale with 4 long bristles along the fore margin, one at the surface near the base, and with a thick transparent processus (sensu-cone?) at the apex. Hind wings narrower than the fore pair, with a dark longitudinal vein throughout the whole length.

Abdomen broader than the pterothorax, three times as long as wide, gradually tapering to apex, which is bluntly conical. All segments with a long, stout bristle at the hind angle, and another before this at the middle of each side; further with a half dozen smaller bristles along the posterior margin. Setae of the last two segments very long and stout, distinctly longer than the segments themselves. Ovipositor as in *Frankliniella persetosae*.

Measurements of female :—Total length of antennae 0.31 mm. I. joint 0.02 mm. long, 0.03 mm. wide; II. joint 0.04 mm. long, 0.025 mm. wide; III. joint 0.06 mm. long, 0.025 mm. wide; IV. joint 0.06 mm. long, 0.025 mm. wide; V. joint 0.045 mm. long, 0.015 mm. wide; VI. joint 0.055 mm. long, 0.02 mm. wide; VII. joint 0.015 mm. long, 0.01 mm. wide; VIII. joint 0.02 mm. long, 0.005 mm. wide.

Head 0'11 mm. long, 0'16 mm. wide. Prothorax 0'13 mm. long, 0'20 mm. wide. Fore femora 0'12 mm. long, 0'06 mm. wide; fore tibiae (including tarsi) 0'22 mm. long, 0'04 mm. wide. Pterothorax 0'32 mm. long, 0'27 mm. wide. Middle femora 0'12 mm. long, 0'05 mm. wide; middle tibiae (including tarsi) 0'20 mm. long, 0'045 mm. wide. Hind femora 0'18 mm. long, 0'05 mm. wide; hind tibiae (including tarsi) 0'31 mm. long, 0'04 mm. wide. Length of wings (without fringe) 0'9 mm. Abdomen 1'0 mm. long, 0'35 mm. wide. Total length 1'4-1'7 mm.

Male.—Smaller than female, but of the same colour. Antennae comparatively longer, the third joint paler and also the basal part of the fourth greyish-yellow. Fore femora longer and more thickened than in the other sex, entirely dark brown. Abdomen small, distinctly narrower than the pterothorax. Penis short; its basal part subglobular, then tapering to apex, which is curved. Before the base of penis there are two pairs of thick, black, short spines on the ninth segment.

Measurements of male:—Total length of antennae 0'31 mm. I. joint 0'02 mm. long, 0'03 mm. wide; II. joint 0'04 mm. long, 0'025 mm. wide; III. joint 0'06 mm. long, 0'02 mm. wide; IV. joint 0'06 mm. long, 0'02 mm. wide; V. joint 0'04 mm. long, 0'015 mm. wide; VI. joint 0'055 mm. long, 0'015 mm. wide; VII. joint 0'015 mm. long, 0'01 mm. wide; VIII. joint 0'02 mm. long, 0'005 mm. wide. Head 0'14 mm. long, 0'16 mm. wide. Prothorax 0'14 mm. long, 0'19 mm. wide. Fore femora 0'15 mm. long, 0'09 mm. wide; fore tibiae (including tarsi) 0'16 mm. long, 0'05 mm. wide. Pterothorax 0'25 mm. long, 0'24 mm. wide. Middle femora 0'15 mm. long, 0'055 mm. wide; middle tibiae (including tarsi) 0'18 mm. long, 0'04 mm. wide. Hind femora 0'18 mm. long, 0'045 mm. wide; hind tibiae (including tarsi) 0'24 mm. long, 0'035 mm. wide. Length of wings (without fringe) 0'7 mm. Abdomen 0'50 mm. long, 0'18 mm. wide. Total length 1'0-1'1 mm.

This species seems to be common in different flowers. Mr. DOCTERS v. LEEUWEN collected it in flowers of the following plants: *Desmodium* spec. (no. 46; Bang Saphan Yai, Southern Siam; 12 X. 1920; together with *Scirtothrips angusticornis*). *Canavallia ensiformis* (L.) Dc. (No. 53; Bangkok, Siam; 9. X. 1920; together

with *Physothrips vitticornis*). *Clitorea* spec. (No. 56; native forest near Saigon; 19 X. 1920). *Vigna* spec. (No. 61; Saigon; 20. X. 1920). *Canavallia ensiformis* (L.) Dc. (No. 73; Ca-Nai 26. X. 1920; together with *Physothrips vitticornis* and *Thrips japonicus*). *Crotalaria saltiana* ANDT. (No. 75; Malam; 26. X. 1920).

This new species, by the chaetotaxy of body and the cross-banded fore wings comes near to *Taeniothrips s. str.* and agrees here in chaetotaxy of fore wings only with *T. distalis* KARNY from Japan. But this latter has the antennae entirely dark and their middle joints longer and more slender than *longistylus*.

5. ***Physothrips vitticornis* n.sp.** (Fig. 3).

Female.—General colour dark brown, with rich, reddish hypodermal pigmentation, with gives to newly developed specimens a bright red colour. Fore tibiae a little paler than the femora, yellowish at the end; all tarsi yellowish. The first two antennal joints as dark as the body, the third pale, yellowish, the fourth somewhat darker, yellowish grey. The following segments greyish brown, but a little paler than body. Therefore the whole antennae grey-brown, with a paler cross-band, formed by the yellowish third and fourth joints. Fore wings dark, grey, at most with a little, indistinct clearer patch near base (as in *Ph. fumosus* TRYBOM).

Head a little wider than long, with the cheeks arched and somewhat converging posteriorly. Eyes, ocelli, chaetotaxy of head, and sculpture of occiput as in *Taeniothrips longistylus*. Mouth-cone conical, tapering to apex, pointed, overreaching distinctly the midst of prosternum. Palpi as in the former species.

Antennae twice as long as head, moderately stout. First joint short, twice as wide as long. Second segment cup-shaped, a little narrower than the preceding one, and a little more than twice as long. Next two joints broadly fusiform, equal in length, and longer and narrower than second; the third a little broader than the fourth. Fifth segment more slender, somewhat shorter than the preceding one, fusiform, but transversely truncated at apex. Sixth segment fusiform, but widest before its middle, longer than each of the preceding joints, as wide as the fourth. Style nearly half as long as the sixth segment, its apical joint a little longer and narrower than the basal.

Segments 1-5 with a crown of strong bristles behind the middle. Sixth a little before the middle. Style with only a few hairs. Sense-cones well developed; those of the third and fourth joint reaching to the insertion of bristles at the following segment. Sixth joint on its ventral surface with a distinct sense-cone, reaching nearly to the end of the basal style-joint.

Prothorax transverse, ovate, as long as the head is wide, and considerably wider than long. Fore margin without setae, each posterior angle with two long, stout bristles, the outer a little longer than the inner one. Fore legs stout, their femora not considerably thickened; tibiae and tarsi as in *Taeniothrips longistylus*.

Pterothorax wider than prothorax, nearly as wide as long, with considerably arched sides of meso- and metathorax, distinctly constricted at the hind margin of each of these two segments. Between the insertion of fore wings a pair of long bristles directed backwards. Sutures of the sterna as in *Taeniothrips longistylus*, also the form and chaetotaxy of middle and hind legs.

Wings reaching to the middle or hind margin of seventh abdominal segment. Fore pair with long fringe and long, strong bristles. On the costa about 25; in the basal half of fore vein 9, in the distal part usually 4, but sometimes 3 or 5; one of the specimens examined has on the right fore wing 4 after a distinct, median interval, but on the left fore wing a continuous line of 15 bristles throughout the whole length of anterior vein, without an interval in the middle, and therefore about 7 bristles in the distal half! Posterior vein with 12—14 setae; scale with 5 along the fore margin, and one on the surface near base. Hind wings very little shaded with greyish, especially at apex, but with a distinct dark median vein throughout the whole length.

Abdomen somewhat broader than the pterothorax, nearly three times as long as wide, tapering to apex, which is distinctly conical, more pointed than usual in this genus. Chaetotaxy and ovipositor as in *Taeniothrips longistylus*.

Measurements:—Total length of antennae 0.25 mm. I joint 0.015 mm. long, 0.03 mm. wide; II. joint 0.035 mm. long, 0.25 mm. wide; III. joint 0.045 mm. long, 0.022 mm. wide; IV. joint 0.045 mm. long, 0.02 mm. wide; V joint 0.04 mm. long, 0.015 mm. wide; VI.

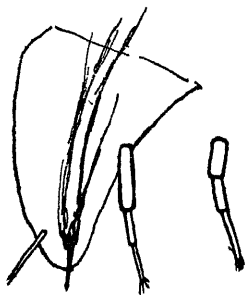
joint 0'05 mm. long, 0'02 mm. wide; VII. joint 0'008 mm. long, 0'006 mm. wide; VIII. joint 0'012 mm. long, 0'004 mm. wide. Head 0'12 mm. long, 0'14 mm. wide. Prothorax 0'14 mm. long, 0'18 mm. wide. Fore femora 0'11 mm. long, 0'05 mm. wide; fore tibiae (including tarsi) 0'13 mm. long, 0'04 mm. wide. Pterothorax 0'23 mm. long, 0'21 mm. wide. Middle femora 0'09 mm. long, 0'04 mm. wide; middle tibiae (including tarsi) 0'12 mm. long, 0'03 mm. wide. Hind femora 0'11 mm. long, 0'04 mm. wide; hind tibiae 0'18 mm. long, 0'03 mm. wide. Length of wings (without fringe) 0'65 mm. Abdomen 0'7 mm. long, 0'25 mm. wide. Total length 1'2 — 1'4 mm.

Collected by MR. DOCTORS v, LEEUWEN in flowers of the following plants: *Melastoma malabathricum* L. (No. 39; Bang Klam, Southern Siam; 30 IX 1920; together with *Thrips japonicus*). *Canavallia ensiformis* (L.) DC. No. 53: Bangkok, Siam; 9 X 1920; together with *Taeniothrips longistylus*. No. 73; Ca-Na, Indo-china; 26 X 1920; together with *Taeniothrips longistylus* and *Thrips japonicus*. *Desmodium umbellatum* DC. (No. 80; Saigon, Indo-china; 29 X 1920).

This new species seems to come nearest to the American *Ph. ehrhornii*, but has a different coloration of antennae. From the African *fumosus* it may be distinguished at once by its much smaller size, the coloration of antennae and the smaller number of bristles on the distal part of fore vein. By its pointed abdominal apex, *Ph. vitticornis* calls to mind somewhat the Javanese *Bregmatothrips theifloris*, but differs from it by the longer style, the

longer sense-cones, the paler fourth antennal segment, and the diverse length of maxillary-palpal joints. It is perhaps not impossible, that in the future *vitticornis* and *theifloris*, by a study of more material from several different localities and food-plants, may be proved to be local or biological races of one and the same species. I have thus far not had sufficient

Fig. 3. Mouth cone of *Physothrips vitticornis*: a maxillary palpus of *Bregmatothrips theifloris*.



material to decide this question, and I think it therefore safer in the first place,

to describe *vitticornis* as a different species, especially too, because *theifloris* has the abdominal apex still more pointed and comes therefore near *Bregmathothrips*, whilst *vitticornis* by this character may rather be placed near *Physothrips*.

6. *Isoneurothrips parvispinus* n.sp.

Female.—General colour dark brown, head and throat a little more yellowish, abdomen darker shaded with grey. Legs yellow. The two first antennal joints of the same colour as head, the third pale yellowish; the others wanting in the unical type specimen. Fore wings clear, hyaline in the basal third, further greyish to apex.

Head one and a half times as wide as long; cheeks arched, with some very small hairs and a somewhat stronger postocular bristle. Eyes large, black, with fine hairs between the facets, occupying somewhat more than half of the length of head. Ocelli large, with red pigment-cup, arranged nearly in a line transverse through the middle of eyes in an obtuse-angular triangle, nearly touching one another, Mouth-cone somewhat pointed, distinctly overreaching the middle of prosternum. Palpi very small, especially the labial ones, short and very thin. Maxillary palpi three-jointed, with short segments.

Prothorax ovate, a little longer than head, one and a half times as wide as long, with broadly rounded sides; with very small anterolateral bristles, and two larger posterolateral ones on each hind angle.

Pterothorax as wide as long, with strongly arched sides of meso- and metathorax, distinctly constricted at the hind margin of each of these two segments. Sutures of mesosternum of the form of an inverted T, with a shorter transverse line before the hind suture. Those of metasternum semi-circular, convex, backwards with a short straight median line going backwards and two oblique ones on each side, directed towards the hind coxae.

Middle and hind coxae rounded, the former distinctly smaller and about twice as widely separated from each other as the hind ones. Legs moderately long and stout, along their whole length set with short hairs; besides these a row of stout bristles along the inner

margin of tibiae, and especially long and stout, spine-like bristles at the end.

Wings reaching about to the ninth abdominal segment, fore pair with two continuous lines of bristles along the veins, 16 on anterior vein, 12 on posterior vein, and about 22 on costa. The bristles of hind vein nearly as long as the wing is broad in the distal half, those of fore vein a little shorter, those of costa somewhat longer.

Abdomen as wide as pterothorax, not quite three times as long as wide. Segments 2-8 on each hind angle with two long, stout, pointed bristles, about as long as the segments themselves. Ninth segment longer than each of the others, with the tenth together conical. Bristles of ninth segment very long and stout, laterally directed, as long as the segment or a little longer, three on each side; besides them two pairs of shorter, stout bristles behind one another on dorsal surface. Last segment on each side with two strong bristles, as long as those of the preceding segment; and a pair of shorter, weaker ones on ventral surface close to the ovipositor. This reaching from the base of 8th segment to apex of the last

Measurements of female:—Antennae? Head 0.09 mm. long, 0.13 mm. wide. Prothorax 0.10 mm. long, 0.15 mm. wide. Pterothorax 0.20 mm. long, 0.20 mm. wide. Middle femora 0.11 mm. long, 0.035 mm. wide; middle tibiae (including tarsi) 0.13 mm. long, 0.03 mm. wide. Hind femora 0.13 mm. long, 0.04 mm. wide; hind tibiae (including tarsi) 0.16 mm. long, 0.035 mm. wide. Length of wings (without fringe) 0.55 mm. Abdomen 0.55 mm. long, 0.20 mm. wide. Total length 0.9-1.0 mm.

Male.—General colour lemon-yellow, pterothorax somewhat tinged with brownish. Legs pale yellow. Antennae pale yellow at base, gradually shaded with grey towards the apex. Their middle joints about fusiform, widest behind the middle; 3 and 4 equal in length, 2 a little shorter, 5 still shorter, 6 longer than any of the others. Style very short, one-jointed. Wings clear, hyaline throughout their whole length; the last bristles of fore vein somewhat more distant from the preceding than the others from each other. Abdomen a little narrower than pterothorax, chaetotaxy as in the

female. No teeth-like spines on ninth segment. Penis not over-reaching the end of abdomen. Testicles bright orange yellow.

Measurements of male :—Total length of antennae 0'18 mm. I. joint 0'01 mm. long, 0'02 mm. wide; II. joint 0'03 mm. long, 0'02 mm. wide; III. joint 0'035 mm. long, 0'02 mm. wide; IV. joint 0'035 mm. long, 0'015 mm. wide; V. joint 0'025 mm. long, 0'015 mm. wide; VI. joint 0'045 mm. long, 0'02 mm. wide; VII. joint 0'005 mm. long, 0'005 mm. wide. Head 0'09 mm. long, 0'13 mm. wide. Prothorax 0'10 mm. long, 0'16 mm. wide. Fore femora 0'10 mm. long, 0'04 mm. wide; fore tibiae (including tarsi) 0'14 mm. long, 0'03 mm. wide. Pterothorax 0'18 mm. long, 0'20 wide. Middle femora 0'09 mm. long, 0'035 mm. wide; middle tibiae (including tarsi) 0'14 mm. long, 0'03 mm. wide. Hind femora 0'14 mm. long, 0'035 mm. wide; hind tibiae (including tarsi) 0'18 mm. long, 0'03 mm. wide. Length of wings (without fringe) 0'54 mm. Abdomen 0'50 mm. long, 0'17 mm. wide. Total length 0'9—1'0 mm.

One male and one female, collected by Mr. DOCTERS V. LEEUWEN in flowers of *Trichosanthes tricuspidata* LOUR (No. 52) at Bangkok (Siam), dated 9. X. 1920.

This new species approaches by the chaetotaxy of fore wings *Isoneurothrips*, and by the short, wide head to *multispinus* BAGNALL (from Hawaii). But the end of middle and hind tibiae is not extended in two pin-like processes, as figured by BAGNALL for *multispinus* (Plate xvii, fig. 20), but only with strong, spinelike, articulately inserted bristles. Further the bristles of *parvispinus*, especially on head and prothorax, are distinctly shorter and weaker than in *multispinus*.

7. *Thrips japonicus* BAGNALL.

1914. BAGNALL, Ann. Mag. Nat. Hist., (8) XIII, p. 288.

In place of this species with some doubt a number of females, collected by Mr. DOCTERS V. LEEUWEN in flowers of the following plants: *Melastoma malabathricum* L. (No. 39; Bang Klam, Southern Siam; 30. IX. 1920; together with *Physothrips vitticornis*). *Helioteres isora* L. (No. 40; Nong Chin, Southern Siam; 30. IX. 1920). *Ipomoea* spec. (No. 44; Surasthra Dani, Southern Siam; 1. X. 1920; together with *Frankliniella persetosae*). *Canavallia*.

ensiformis (L.) DC. (No. 73; Ca-Na, Indo-china; 26. X. 1920; together with *Taeniothrips longistylus* and *Physothrips vitticornis*).

The material before me agrees tolerably with BAGNALL'S description; but the size is somewhat smaller, total length about 1.0 mm. The last abdominal segment has a distinct longitudinal suture throughout its whole length, as also stated by BAGNALL for the Japanese specimens.

The specimens before me agree also with UZEL'S short description of his *var. pullus* of *Thrips tabaci*, but here the third antennal joint is the palest of all, in *pullus* the first. Specimens from onions from Java, which I would rather refer to *tabaci pullus*, have the whole body uniformly dark and the fore wings nearly clear.

A comparison with the other Indian species shows, that my *japonicus* is identical with none of them. *Thrips oryzae* (originally described by WILLIAMS from British India, but occurring also on rice in Java) has the body uniformly dark, the antennae shorter and stouter, and the ninth abdominal segment much longer (very characteristic for *oryzae*!). But the colour and chaetotaxy of fore wings is the same in both species.

Thrips florum is also very similar, but somewhat larger and uniformly dark. "*Thrips magnipes*" and "*rhodamnia*" (SCHMUTZ) are contracted specimens of *florum*, and therefore the abdomen seems darker, because its segments are somewhat telescoped.

Thrips parvus has but two bristles on distal half of fore vein, is uniformly coloured and somewhat smaller than the specimens before me.

The Japanese *albipes* BAGNALL, finally, seems to be very similar to the species from Further India, but has the head a little longer, and the eighth abdominal segment with a fine comb-like fringe on hind margin, entirely wanting in the material before me.

Subfamily Aptinothripinae KARNY.

8. *Anaphothrips floralis* n.sp.

Female. Male.—General colour lemon yellow, pterothorax somewhat darker, brownish yellow. First antennal joint paler than head, nearly clear, second and third of the same colour as head; the following ones increasingly greyish, sixth and style dark grey. Fore

wings somewhat shaded with greyish, also the hind wings at base and along the median vein. Testicles bright orange red.

Head one and a half times as wide as long, with slightly arched sides. Eyes large, black, occupying more than half of the length of head. Ocelli large, with red pigment-cups, arranged in a rectangular triangle, the anterior one placed behind the fore margin of eyes, the posterior ones near their middle. No conspicuous bristles.

Antennae stout, about twice as long as head. First segment very small, about as long as wide. Second cup-shaped, broadly rounded, distinctly wider than the other joints, about as long as wide. Following segments broadly clavate; sixth fusiform, but widest near the base, the longest of all the joints, without a transverse suture. Style short, with the first joint nearly as long as the second. Bristles and sense-cones inconspicuous.

Mouth-cone conical, distinctly overreaching middle of prosternum. Maxillary palpi about half as long as the mouth-cone, with three joints subequal in length, the basal one the widest, the apical one the narrowest. Labial palpi very thin, but a little more than half as long as the maxillary ones, with an annular basal joint, and a long, narrow apical one.

Prothorax a little longer than head, one and a half times as wide as long, broadly rounded, without bristles. Pterothorax as long as wide, with arched sides of meso- and metathorax, distinctly constricted at the hind margin of each of these two segments. Sutures of mesosternum in the form of an inverted T, those of metasternum short, consisting of a transverse line, from which on each side goes a short longitudinal suture towards the hind coxae, with an obtuse angle just before reaching them.

Hind coxae twice as large as the middle ones, the distance between them only one-fourth of that between the middle coxae. All legs somewhat stout, without conspicuous bristles, except a few at the end of tibiae. Tarsi not toothed.

Wings reaching about to the eighth abdominal segment; fore pair with moderately long fringe, and very short, weak bristles; three of them on the distal half of anterior vein.

Abdomen a little broader than pterothorax, with very short, nearly abortive bristles; only those of the two last segments somewhat longer and stouter; about as long as the segments themselves. Ovipositor reaching from distal part of the seventh segment to the end of abdomen. Ninth tergite of male, near the middle, with a transverse line of three long bristles on each side, and between them, near the middle, a pair of short, dark, stout spines. Penis short, acute at apex, hardly overreaching the end of last segment.

Measurements of female.—Head 0'08 mm. long 0'12 mm. wide. Prothorax 0'10 mm. long, 0'15 mm. wide. Fore femora 0'08 mm. long, 0'04 mm. wide, fore tibiae (including tarsi) 0'14 mm. long, 0'03 mm. wide. Pterothorax 0'20 mm. long and wide. Middle femora 0'10 mm. long, 0'03 mm. wide; middle tibiae (including tarsi) 0'15 mm. long, 0'025 mm. wide. Hind femora 0'12 mm. long, 0'03 mm. wide; hind tibiae (including tarsi) 0'16 mm. long, 0'025 mm. wide. Length of wings (without fringe) 0'6 mm. Abdomen 0'70 mm. long, 0'24 mm. wide. Total length 1'1 mm.

Measurement of male.—Total length of antennae 0'18 mm. I. joint 0'015 mm. long, 0'015 mm. wide; II. joint 0'025 mm. long, 0'025 mm. wide; III. joint 0'03 mm. long, 0'015 mm. wide; IV. joint 0'03 mm. long, 0'02 mm. wide; V. joint 0'025 mm. long, 0'015 mm. wide; VI. joint 0'035 mm. long 0'015 mm. wide; VII. joint 0'007 mm. long, 0'006 mm. wide; VIII. joint 0'008 mm. long, 0'005 mm. wide. Length of head 0'08 mm., of prothorax 0'10 mm. Fore femora 0'08 mm. long, 0'03 mm. wide; fore tibiae (including tarsi) 0'1 mm. long, 0'025 mm. wide. Length of pterothorax 0'18 mm. Middle femora 0'08 mm. long, 0'03 mm. wide; middle tibiae (including tarsi) 0'1 mm. long, 0'025 mm. wide. Hind femora 0'10 mm. long, 0'025 mm. wide; hind tibiae (including tarsi) 0'1 mm. long, 0'02 mm. wide. Length of wings (without fringe) 0'40 mm., of abdomen 0'45 mm. Total length 0'8 mm.

One female and one male, collected by MR. DOCTERS v. LEEUWEN in flowers of *Clitorea ternatea* L. (No. 81, at Saigon, Indo-china, dated 30 X 1920).

It approaches, in my key, (*Zeitschr. wiss. Ins.-Biol.*, X, p. 355 358, 1914) close to the African *loennbergi*, but differs from

it at once by the entire lack of prothoracic bristles. Cannot be confused with any of the other hitherto known species.

SUBORDER TUBULIFERA HALIDAY.

Family Phloeothripidae UZEL.

Subfamily Haplothripinae KARNY.

9. *Haplothrips soror* SCHMUTZ.

1913. SCHMUTZ, Sitzber. Akad. Wiss. Wien., Math.-nat. Kl., 122, I, p. 1033, 1039.

1921. PRIESNER, Treubia, II, 1, p. 6.

Two specimens collected by Mr. DOCTERS v. LEEUWEN in flowers of *Celosia argentea* L. (No. 76), at Mour Man, Indo-china, dated 26. X. 1920, together with *Frankliniella vicina*.

The species was hitherto recorded only from Ceylon.

10. *Haplothrips inquilinus* PRIESNER.

1921. PRIESNER, Treubia, II, 1. p. 4, 6.

1921. KARNY, Treubia, II, 1, p. 79, 80.

1922. KARNY, Beitr. mal. Thys. VII.-Treubia, III, 1.

Some specimens in the galls of *Austrothrips cochinchinensis* on ? *Hymenodictyon parviflorum* OLIVER (No. 43; Ban Klong Tahu, Southern Siam; 1. X. 1920), and in those of *Gynaikothrips leeuweni* on *Pavetta indica* L. (No. 63; native forest near Saigon, Cap. St. Jacques; 21. X. 1920), collected by Mr. DOCTERS v. LEEUWEN.

The species was hitherto recorded from Java and Celebes (Saleier).

11. *Neoheegeria mandax* KARNY.

1910. DOCTERS v. LEEUWEN-REIJNVAAN, Marcellia, IX, p. 58 (without name)

1911. DOCTERS v. LEEUWEN-REIJNVAAN, Marcellia, X, p. 93 (without name).

1912. KARNY, Marcellia XI, p. 122.

1913. KARNY & DOCTERS v. LEEUWEN-REIJNVAAN, Bull. Jard. Bot. Buitenzorg, (2) X, p. 10, 36, 38, 64.

1914. DOCTERS v. LEEUWEN-REIJNVAAN, Bull. Jard. Bot. Buitenzorg, (2), XV, p. 40, 41.

1919. UICHANCO, Philipp. Journ. Sci., XIV, 5, p. 548; Plate XIV, fig. 2.

Several specimens from Krompha (Annam, $\pm 50^{\circ}$ m; 23. X. 1920), collected by Mr. DOCTERS v. LEEUWEN in leaf-galls on *Mallotus philippensis* M. A. (No. 66; together with *Eothrips laticauda*), and one from a rolled leaf on ? *Salacia* (No. 70). In the latter the mouth-cone is typically shaped, but in the specimens from *Mallotus* it is somewhat shorter and more blunt than in the Javanese type specimens from *Mallotus*,

The species was hitherto recorded from Java and the Philippine Islands.

Subfamily Trichothripinae KARNY.

12. *Austrothrips cochinchinensis* n.sp. (Fig. 4).

Female. Male. General colour blackish brown, all tibiae and tarsi somewhat paler, yellowish brown. First antennal segment as dark as head, second gradually paler towards the apex. The following joints yellow, only the last a little shaded with brownish. Wings clear, hyaline.

Head one and one-fifth times as wide as long, widest across the eyes; cheeks straight, slightly converging backwards, finely gradulated, without spines. Eyes small, black, occupying one-third of the length of head, with rounded hind margin. Ocelli large, with dark pigment-cups, nearly touching one another, arranged in a rectangular triangle, the anterior one behind the fore margin of eyes, posterior ones near their middle. Postocular bristles inserted a little behind the middle of head, as far distant from cheeks as from hind margin of eyes, hyaline, at apex distinctly dilated and clavate, reaching forwards about to the middle of eyes. Dorsal surface of head with a fine, transverse striation.

Antennae long and stout, twice as long as head, or a little more. First joints cylindrical, wider than long, at base nearly touching the fore margin of eyes; between them the fore head a little produced. Second joint cup-shaped, somewhat longer than wide, as wide as the first. The following segments nearly globular, but

distinctly constricted at base, as wide as the preceding ones, and only a very little longer than wide. Seventh joint fusiform, twice as long as wide; eighth also fusiform, as long as the seventh, but distinctly narrower.

All joints before the apex with a crown of very short, weak bristles. The terminal longitudinal row of bristles beginning a little before the middle of eighth antennal joint (cf. *Liothrips priscus*, Treubia, II, 1, p. 44) and reaching to its end.

Sense area of second antennal segment circular, placed behind the middle. Sense-cones hyaline, but long and stout, at least twice

as long as the bristles, reaching nearly to the middle of the following joint; but on the third segment the sense-cone of anterior margin a little shorter, on fifth and sixth the posterior one very short, less than half as long as that of the anterior margin.

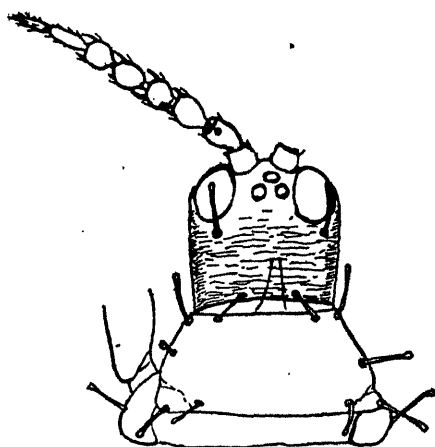


Fig. 4. Head and prothorax of *Austrothrips cochinchinensis*.

Mouth-cone broadly rounded, reaching a little beyond the middle of prosternum. Palpi short, with an annular basal and a longer, cylindrical apical joint. Labial palpi still shorter than the maxillary ones.

Prothorax about as long as head, strongly widened posteriorly, with obtuse hind angles. Without a longitudinal furrow. All bristles considerably dilated at apex, clavate. The anterolateral ones about as long as the postocular setae, half as long as the prothorax. Anteromarginal bristles a little shorter than those of the fore angles, and a little closer to them than to the median line. Mediolateral ones as far distant from the anterolateral ones as from the posterolateral ones, about as the anteromarginal ones. Posterolateral bristles a little longer than those of the fore angles, curved backwards. Posteromarginal setae about twice as far distant from median line as from the hind angles, short. Prosternum punctured, only on each side of mouth-cone with a small, transversely directed, smooth plate.

Fore coxae ovate having on the outer edge a long, clavate, forwardly directed bristle about equal in length to the posterolateral bristles. Fore legs short and stout; femora in both sexes a little broadened. Fore tarsus with only a very small, hardly distinguishable tooth and this only in male.

Pterothorax a little wider than prothorax, distinctly shorter than wide, with obtuse, somewhat protruding fore angles, sides of mesothorax nearly parallel, and those of metathorax arched, distinctly converging backwards. Disc of mesonotum with a fine, rhomboidal, transverse reticulation. Just before the transverse hind suture of mesosternum a short, parallel, transverse line, crossed by a longitudinal median suture, reaching forwards about to the middle of mesosternum metasternum with only two short, oblique lines, forming a right angle, but neither reaching to the tip of this angle, nor to the hind coxae.

Middle and hind coxae rounded, distinctly longer than wide; the former ones smaller and nearly twice as far distant from one another as the hind ones. Middle and hind legs moderately long and stout, with a few short hairs, but without stronger bristles. Tarsi not toothed.

Wings reaching about to the fifth abdominal segment, with long, but not dense fringe, clear, hyaline, not constricted near the middle. Fore pair with three distinctly clavate bristles at base, near the fore margin, nearly equal in length, and not as long as the wing is broad; the second a little closer to the first than to the third. Hind margin without duplicated cilia.

Abdomen scarcely as wide as the pterothorax, about three times as long as wide. First tergite with a rounded, finely reticulated plate in the middle, and a smaller one on each side; space between them finely punctured. All following segments with two stout, strongly clavate bristles near each hind angle, gradually increasing in length from base to apex; the outer one on second segment scarcely more than half as long as the segment, on seventh about as long as it; the inner ones a little shorter. Eighth segment with only one such bristle near each hind angle, a little shorter than the outer one of the preceding segment. Ninth segment with three clavate

bristles on each side, about half as long as the tube. The hind pairs of wing-retaining spines well developed, distinctly S-shaped, on segments 3—6 about two-thirds as long as the distance between their tips; on segments 2 and 7 distinctly shorter. Fore pairs nearly abortive. Tube stout, about as long as head, at base two-fifths as wide as long and twice as wide as at apex. Terminal bristles hair-like, not clavate, about half as long as the tube itself.

Measurements of female:—Total length of antennae 0'30 mm. I. joint 0'02 mm. long, 0'03 mm. wide, II. joint 0'04 mm. long, 0'03 mm. wide; III. joint 0'04 mm. long, 0'03 mm. wide; IV. joint 0'04 mm. long, 0'03 mm. wide; V. joint 0'04 mm. long, 0'03 mm. wide; VI. joint 0'04 mm. long, 0'03 mm. wide; VII. joint 0'04 mm. long, 0'02 mm. wide; VIII. joint 0'04 mm. long, 0'01 mm. wide. Head 0'15 mm. long, 0'18 mm. wide. Prothorax 0'15 mm. long, 0'31 mm. wide (across fore coxae). Fore femora 0'16 mm. long, 0'05 mm. wide; fore tibiae (including tarsi) 0'17 mm. long, 0'03 mm. wide. Pterothorax 0'26 mm. long, 0'33 mm. wide. Middle femora 0'09 mm. long, 0'05 mm. wide; middle tibiae (including tarsi) 0'12 mm. long, 0'03 mm. wide. Hind femora 0'15 mm. long, 0'05 mm. wide; hind tibiae (including tarsi) 0'16 mm. long, 0'035 mm. wide. Length of wings (without fringe) 0'6 mm. Abdomen (including tube) 1'05 mm. long, 0'32 mm. wide. Length of tube 0'15 mm. width at base 0'06 mm. at apex 0'03 mm. Total length 1'2—1'6 mm.

Measurements of male:—Total length of antennae 0'29 mm. I. joint 0'02 mm. long, 0'03 mm. wide; II. joint 0'04 mm. long, 0'03 mm. wide; III. joint 0'035 mm. long, 0'03 mm. wide; IV. joint 0'035 mm. long, 0'03 mm. wide; V. joint 0'04 mm. long, 0'03 mm. wide; VI. joint 0'04 mm. long, 0'025 mm. wide; VII. joint 0'04 mm. long, 0'02 mm. wide; VIII. joint 0'04 mm. long, 0'01 mm. wide. Head 0'12 mm. long, 0'15 mm. wide. Prothorax 0'14 mm. long, 0'30 mm. wide (across fore coxae). Fore femora 0'15 mm. long, 0'07 mm. wide; fore tibiae (including tarsi) 0'15 mm. long, 0'04 mm. wide. Pterothorax 0'25 mm. long, 0'32 mm. wide. Middle femora 0'10 mm. long, 0'04 mm. wide; middle tibiae (including tarsi) 0'11 mm. long, 0'03 mm. wide. Hind femora 0'13 mm. long, 0'05 mm. wide; hind tibiae (including tarsi) 0'22 mm. long, 0'035 mm. wide. Length of wings (without fringe) 0'55 mm. Abdomen

(including tube) 0.85 mm long, 0.28 mm wide. Length of tube 0.14 mm, width at base 0.06 mm, at apex 0.03 mm. Total length 1.3-1.5 mm.

Both sexes collected by Mr. DOCTERS v. LEEUWEN in leaf galls on *Hymenodictyon parviflorum* OLIVER (No. 43; Ban Klang Tahu, Southern Siam; 1. X. 1920; together with *Haplothrips inquilinus*.—No. 60; native forest Tri Han near Saigon; \pm 100 m; 19. X. 1920).

This species in its whole appearance and the form of last antennal segment resembles *Eothrips atavus*, but may be distinguished from it and the other *Eothrips* species at once by its somewhat wider head. By this characteristic and by the lack of duplicated cilia of fore wings it approaches the genus *Austrothrips* (see my key to the wide-headed Trichothripinæ, Beitr. mal. Thys. VI; Treubia III, 1; 1922). From the only hitherto known *Austrothrips*-species, the South American *A. verae*, *cochinchinensis* may be distinguished by its distinctly shorter and stouter antennæ, somewhat similar to those of *Vuilletia*; but the other general characters agree better with *Austrothrips* than with the North African *Vuilletia*.

13. *Eothrips laticeps* n. sp. (Fig. 5.)

Female. Male.—Blackish brown; end of fore femora, fore tibiæ, and of middle and hind tibiæ, and all tarsi yellowish brown. Antennæ brownish yellow, first joint darker brown, second shaded with brown towards the base, seventh a very little darker than the preceding ones, eighth distinctly shaded with grey. Fore and hind wings brown on their whole surface, hind pair a little darker along their median vein.

Head as long as wide, with straight, parallel sides. Eyes small, black, occupying one third of the length of head, with somewhat rounded hind margin. Ocelli moderately large, with well developed pigment-cups, arranged in a rectangular triangle. The anterior one forwardly directed, placed on a line going through the fore margins of eyes; the posterior ones a little before the midst of the eyes. Postocular bristles inserted close to the hind margin of

eyes, forwardly directed, somewhat shorter than the eyes, stout, blunt at apex, but not clavate. Dorsal surface of head with a fine, transverse reticulation.

Antennae about twice as long as head, touching at base the fore margin of eyes; between them the fore head somewhat produced. First antennal joint wider than long, widest at the base. Second joint cup-shaped, a little narrower and about twice as long as the first. The three following joints broadly clavate, the fourth as wide as the second, 3 and 5 little narrower; 3 the longest of all the joints, 4 and 5 a little shorter, about as long as the second. Sixth joint nearly cylindrical, but gradually narrowed in basal half, and constricted at apex. Seventh segment fusiform, but widest near the base, transversally truncate at apex, shorter and narrower than the preceding joints. Eighth segment pin-like, bluntly conical, broadly jointed with the seventh, only a little longer than the first, and distinctly narrower than the preceding joints.

Segments 2 — 5 with a crown of bristles before the end, about half as long as the segments, on the second still shorter. Sixth joint in its distal half set with such bristles, 7 and 8 throughout the whole length. Median line of bristles reaching from the first third of 7 to apex of 8.

Sense area of second segment circular, placed behind its middle. Sense-cones of the following segments stout, a little curved, blunt at apex, about twice as long as the distance of their insertion from the end of their joint. Those on the anterior margin a little shorter than the posterior ones. On the fourth joint a little shorter than on 5 and 6; on 3 still shorter, the anterior abortive. Seventh joint on dorsal surface with a similar sense-cone, reaching about to the middle of eighth segment, but abortive or entirely wanting in some specimens.

Amongst the males before me, there is one male with one antenna normally developed, the other anomalous, seven-jointed.

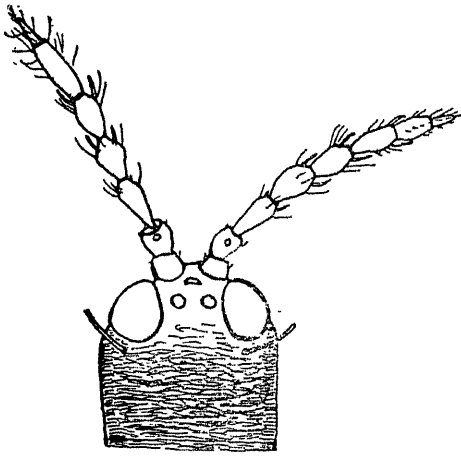


Fig. 5. Head of an *Eothrips laticeps* with the one antenna anomalous.

Segments 1 - 4 normal, 5 a little shorter than usually, sixth very long, fusiform, truncate at apex. Seventh shaped like the eighth of normal antenna, but a little narrower and more pointed. Sixth joint without sense-cone; median bristle line confined to the seventh.

Mouth-cone broadly rounded, reaching hardly beyond the middle of prosternum, Maxillary palpi

stout, about half as long as the mouth-cone; their basal joint as long as wide. the apical one about four times as long as wide, with long bristles at the end. Labial palpi short, as wide as the maxillary ones, and only about twice as long as wide:

Prothorax about as long as head, and nearly twice as wide (across fore coxae) as long, strongly widened backwards. Posterolateral bristles stout, about half as long as the prothorax, blunt at apex. Posteromarginal bristles more than twice as far distant from the middle line than from those of the hind angles, scarcely half as long as these. Anterolateral bristles still shorter, blunt, only a very little overreaching the fore margin of prothorax. Anteromarginal ones still weaker, reduced to short hairs, about three times as far distant from each other as from the fore angles. Mediolateral bristles entirely abortive, not conspicuous. Prosternum with a small triangular, laterally directed plate on each side of the mouth-cone, a larger rhomboidal one near each fore angle, a pair of irregularly pentagonal ones before the hind margin, and behind them a very small ovate median plate. All plates smooth, strongly chitinized, the space between them with a well expressed, dotted sculpture.

Fore coxae ovate, with a blunt forwardly-curved bristle on the outer hind angle, somewhat shorter and weaker than the posterolateral ones of prothorax. Fore femora distinctly shorter than

head, moderately enlarged, not quite half as wide as long. Tibiae stout, tarsi, not toothed.

Pterothorax wider than prothorax, somewhat shorter than wide, with blunt fore angles, sides of mesothorax nearly parallel, those of metathorax arched, somewhat converging backwards. Sutures of mesosternum composed by a small, transverse, obtuse triangle, the hind margin of which formed by the hind sutures of mesosternum from each side of the triangle a very short oblique line runs laterally forward, and from its tip a similar median line not quite to the midst of mesosternum. Suture lines of metasternum similar to those of the preceding species, but a little shorter and their angle more blunt.

Middle coxae smaller than the hind ones, and about twice as far distant from each other. Middle and hind legs stout femora at base with a long, hair-like bristle on the inner margin, tibiae with a similar one at the end of outer margin. Tarsi without teeth.

Wings reaching to the seventh abdominal segment, broad, not constricted at the middle. Fore pair near the base with 4 stout, blunt bristles; three of them along the abortive longitudinal vein, the third of which a little longer than the others and a little more distant from the second than this from the first, close to the second bristle behind the vein still another similar bristle. All these bristles about half as long as the wing is broad, except the last, distal, longer bristle on vein. Hind margin before the apex with 5-8 duplicated fringe hairs.

Abdomen a very little wider than pterothorax, three times as long as wide. The median plate of first tergite large, trapezoidal, but with double S-shaped sides; the lateral pair smaller, triangular; space between them punctured. The following segments near each hind angle with two blunt, stout bristles, the inner one of which is about as long as the segments themselves, the outer one on 2-6 distinctly shorter, on 7 and 8 longer. Bristles of ninth segment long, sharply pointed, only a little shorter than the tube. Hind pair of wing-retaining spines stout, distinctly S-shaped, on segment 4 and 5 nearly as long as the distance between their tips, on 3 and 6 shorter and weaker, on 2 still shorter, on 7 nearly abortive. Fore pair hair-like, at most half as long as the spines of hind pair. Tube

a little shorter than head, stout, at base nearly half as wide as long and twice as wide as at apex. Terminal bristles hair-like, the longer ones about two-thirds of the length of tube, the shorter ones only one-third as long as the others.

Measurements of female:—Total length of antennae 0'38 mm. I. joint 0'03 mm. long, 0'04 mm. wide; II. joint 0'05 mm. long, 0'035 mm. wide; III. joint 0'065 mm. long, 0'03 mm. wide; IV. joint 0'06 mm. long, 0'035 mm. wide; V. joint 0'05 mm. long, 0'03 mm. wide VI. joint 0'05 mm. long, 0'03 mm. wide; VII. joint 0'045 mm. long, 0'025 mm. wide; VIII. joint 0'035 mm. long, 0'015 mm. wide. Head 0'19 mm. long, 0'19 mm. wide. Prothorax 0'20 mm. long, 0'36 mm. wide (across fore coxae). Fore femora 0'17 mm. long, 0'08 mm. wide; fore tibiae (including tarsi) 0'16 mm. long, 0'03 mm. wide. Pterothorax 0'36 mm. long, 0'41 mm. wide. Middle femora 0'13 mm. long, 0'06 mm. wide; middle tibiae (including tarsi) 0'2 mm. long, 0'04 mm. wide. Hind femora 0'22 mm. long, 0'07 mm. wide; hind tibiae (including tarsi) 0'30 mm. long, 0'05 mm. wide. Length of wings (without fringe) 0'85 mm. Abdomen (including tube) 1'3 mm. long, 0'42 mm. wide. Length of tube 0'16 mm. width at base 0'07 mm., at apex 0'04 mm. Total length 1'9-2'4 mm.

Measurements of male:—Total length of antennae 0'34 mm. I. joint 0'02 mm. long, 0'04 mm. wide; II. joint 0'05 mm. long, 0'03 mm. wide; III. joint 0'06 mm. long, 0'03 mm. wide; IV. joint 0'05 mm. long, 0'03 mm. wide; V. joint 0'05 mm. long, 0'025 mm. wide; VI. joint 0'045 mm. long, 0'03 mm. wide; VII. joint 0'04 mm. long, 0'025 mm. wide; VIII. joint 0'025 mm. long, 0'02 mm. wide. Head 0'18 mm. long, 0'17 mm. wide. Prothorax 0'16 mm. long, 0'32 mm. wide (across fore coxae). Fore femora 0'16 mm. long, 0'07 mm. wide; fore tibiae (including tarsi) 0'13 mm. long, 0'04 mm. wide. Pterothorax 0'30 mm. long, 0'34 mm. wide. Middle femora 0'13 mm. long, 0'05 mm. wide; middle tibiae (including tarsi) 0'14 mm. long, 0'04 mm. wide. Hind femora 0'18 mm. long, 0'05 mm. wide; hind tibiae (including tarsi) 0'24 mm. long, 0'04 mm. wide. Length of wings (without fringe) 0'7 mm. Abdomen (including tube) 1'15 mm. long, 0'37 mm. wide. Length of tube 0'16 mm. width at base 0'07 mm. at apex 0'04 mm. Total length 1'6-1'8 mm.

Collected by Mr. DOCTERS v. LEEUWEN in leaf-galls on *Aporosa* (No. 57; native forest near Tri Han, Saigon; \pm 100 m; 19 X 1920; together with *Mesothrips vitripennis*.—No. 69; Krompha. Annam; 23 X 1920).

This new species comes in my key (Zeitschr. wiss. Ins.—Biol., XI, p. 146–147; 1915) close to *laticauda*, but differs from it by the shorter and wider head, and by the fore wings uniformly brownish on their whole surface. The shape of head resembles somewhat the wide-headed Trichothripinae, especially *Austrothrips*, but from it *laticeps* may be distinguished at once by the presence of double cilia on fore wings and by their brown colour.

14. *Eothrips laticauda* (KARNY).

1910. DOCTERS v. LEEUWEN-REIJNVAAN, Marcellia, IX, p. 58 (without name),

1911. DOCTERS v. LEEUWEN-REIJNVAAN, Marcellia, X, p. 93 (without name).

1912. KARNY; Marcellia, XI, p. 124 (*Dolerothrips*).

1913. KARNY and DOCTERS v. LEEUWEN-REIJNVAAN, Bull. Jard. Bot. Buitenzorg, (2) X, p. 38, 89 (*Dolerothrips*).

1915. KARNY and DOCTERS v. LEEUWEN-REIJNVAAN, Zeitschr. wiss. Ins.—Biol., XI, p. 146 (*Dolerothrips*).

1915. HOOD, Entomologist, p. 107.

One specimen in leaf-galls on *Mallotus philippensis* M. A. (No. 66; Krompha, Annam; \pm 50 m; 23 X 1920; together with *Neoheegeria mendax*; leg. DOCTERS v. LEEUWEN).

This species was hitherto recorded only from Java.

15. *Eothrips schouteniae* n.sp.

Black. Fore tibiae and all tarsi yellowish brown. Antennae pale yellow; first segment and base of second blackish; sixth somewhat shaded with brownish; seventh and eighth joint dark, brownish black. Wings clear, hyaline, only a very little greyish along the margins and the median vein.

Head scarcely longer than wide, a little longer than prothorax. Eyes small, occupying not quite one-third of the length of head.

Postocular bristles inserted behind the hind margin of eyes, hyaline, somewhat dilated at apex, about as long as the eyes. Mouth-cone similarly shaped as in *laticeps*, but the maxillary palpi a little more slender.

Antennae twice as long as head, with a distinct narrow space between their base and the fore margin of eyes; fore head between them scarcely produced. First joint shortly cylindrical, a little wider than long. Second segment cup-shaped, a little wider than the first, and a little longer than wide. The following segments clavate, about twice as long as wide, Sixth a little narrower and shorter, nearly cylindrical, but somewhat tapering to apex and still more towards the base. Seventh joint still shorter and narrower, fusiform, but widest near the base, transversely truncate at apex. Eighth segment small, conical.

All bristles weak and short, only a little overreaching the ends of their segments. Median apical line reaching from the midst of seventh segment to the end of eighth. Sense area of second joint indistinct. Sense cones hyaline, sharply pointed at apex, nearly half as long as their segments, but those on the third considerably shorter.

Prothorax half as long as wide across fore coxae, strongly widened backwards. All bristles stout and a little dilated at apex. The posterolateral ones about half as long as the prothorax, posteromarginal bristles closely approximated to them, somewhat more than half as long as those. Anterolateral and mediolateral setae equal in length, about half as long as the posteromarginal ones or one third of the length of posterolateral bristles. The mediolateral ones as far from the latter as from the anterolateral setae.

Fore coxae ovate, rounded, with an outwards-directed bristle about as long as the posteromarginal ones of prothorax, but distinctly weaker. Fore legs moderately stout, their femora nearly as long as head; tarsi without tooth.

Pterothorax about as wide as prothorax across fore coxae, nearly as long as wide, with rounded fore angles, sides of mesothorax nearly parallel, those of metathorax slightly arched, somewhat converging posteriorly. Middle coxae twice as widely separated from each other as the hind ones. Middle and hind legs long and mo-

derately stout, with a long hair before the end of tibiae on the outer margin. Tarsi not toothed.

Wings reaching about to the middle of abdomen, nearly clear, not constricted at the middle; about 10 duplicated cilia on the hind margin of fore wings before the apex.

Abdomen somewhat wider than pterothorax, nearly three times as long as wide. Bristles somewhat dilated at apex; their number and length as in *laticeps*. Those of ninth segment but a very little dilated at apex, distinctly shorter than tube. This short and stout, about three-fifths as long as head, at base about half as wide as long and nearly twice as wide as at apex. Terminal bristles sharply pointed, hair-like, the longer ones about as long as the tube itself, the shorter ones only one third the length of the others.

Measurements.:—Total length of antennae 0'40 mm. I. joint 0'025 mm. long, 0'03 mm. wide; II. joint 0'04 mm. long, 0'035 mm. wide; III. joint 0'065 mm. long, 0'025 mm. wide; IV. joint 0'06 mm. long, 0'035 mm. wide; V. joint 0'065 mm. long, 0'03 mm. wide; VI. joint 0'06 mm. long, 0'03 mm. wide; VII. joint 0'055 mm. long, 0'025 mm. wide; VIII. joint 0'03 mm. long, 0'01 mm. wide. Head 0'20 mm. long, 0'18 mm. wide. Prothorax 0'15 mm. long, 0'33 mm. wide (across fore coxae). Fore femora 0'19 mm. long 0'07 mm. wide; fore tibiae (including tarsi) 0'25 mm. long, 0'04 mm. wide. Pterothorax 0'29 mm. long, 0'32 mm. wide. Middle femora 0'16 mm. long, 0'06 mm. wide; middle tibiae (including tarsi) 0'25 mm. long, 0'04 mm. wide. Hind femora 0'18 mm. long, 0'06 mm. wide; hind tibiae (including tarsi) 0'25 mm. long, 0'04 mm. wide. Length of wings (without fringe) $\frac{3}{4}$ mm. Abdomen (including tube) 1'10 mm. long, 0'38 mm. wide. Length of tube 0'13 mm., width at base 0'07 mm. at apex 0'04 mm. Total length 1'9 - 2'0 mm.

Two specimens collected by DR. DOCTORS v. LEEUWEN in leaf galls on *Schoutenia ovata* Korth. (No. 67) at Krompha, Annam, together with one *Eothrips annulicornis* dated 23. X. 1920.

This new species, in the coloration and shape of antennal joints, comes between *E. courcatus* and *laticauda*, but distinctly diverging from both, from the former especially by the great number of double fringe hairs, from the latter by the nearly clear wings.

16. Eothrips annulicornis (KARNY).

1910. DOCTERS v. LEEUWEN-REIJNVAAN, Marcellia, IX, p. 186 (without name).
1913. KARNY AND DOCTERS v. LEEUWEN-REIJNVAAN, Bull. Jard. Bot. Buitenzorg (2) X, p. 31, 34, 87 (*Dolerothrips*).
1914. DOCTERS v. LEEUWEN-REIJNVAAN, Bull. Jard. Bot. Buitenzorg (2) XV, p. 39 (*Dolerothrips*).
1915. KARNY AND DOCTERS v. LEEUWEN-REIJNVAAN, Zeitschr. wiss. Ins.-Biol., XI, p. 146 (*Dolerothrips*).
1915. HOOD, Entomologist, p. 107.

One specimen together with the preceding species, and one in leaf galls on *Loranthus pentandrus* L. (No. 79; Saigon; 29. X. 1920; together with *Eothrips crassicornis*), collected by Mr. DOCTERS v. LEEUWEN.

~ This species was hitherto known only from Java.

17. Eothrips crassicornis (KARNY).

1910. DOCTERS v. LEEUWEN-REIJNVAAN, Marcellia, IX, p. 186 (without name).
1912. KARNY, Marcellia, XI, p. 126 (*Dolerothrips*).
1913. KARNY AND DOCTERS v. LEEUWEN-REIJNVAAN, Bull. Jard. Bot. Buitenzorg (2) X, p. 31, 34, 84 (*Dolerothrips*).
1915. KARNY AND DOCTERS v. LEEUWEN-REIJNVAAN, Zeitschr. wiss. Ins.-Biol., XI, p. 147 (*Dolerothrips*).
1915. HOOD, Entomologist, p. 107.

One specimen together with one of the preceding species, collected by Mr. DOCTERS v. LEEUWEN in leaf galls on *Loranthus pentandrus* L. (Saigon).

Further distribution : Java.

18. Eothrips hyalopterus n.sp. (Fig. 6).

Female. Male.—Black, fore tibiae and all tarsi yellowish brown. First antennal joint blackish brown, second brown, paler towards the apex, the following ones yellow, the eighth somewhat shaded with brown. Wings clear, hyaline, but brown at extreme base.

Head a very little longer than wide, with granulated, nearly straight and parallel sides. Eyes large, with rounded hind margins, occupying nearly half of the length of head. Posterior ocelli placed before the middle of inner margin of eyes, the anterior one directed forwards. Postocular bristles inserted close behind the middle of head, sharply pointed, about half as long as the eyes. Behind them a short, spine-like bristle on each cheek, not quite half as long as the postocular ones. Mouth-cone broadly rounded, reaching hardly beyond the midst of prosternum.

Antennae twice as long as head, with a distinct narrow space between their insertion and the fore margin of eyes, fore head between them very little produced. First joint considerably shorter than wide at base. Second segment cup-shaped, nearly as wide as the first, somewhat longer than wide. The following joint about one and a half times as long as wide, broadly clavate, nearly equal in length and width. Sixth joint distinctly narrower than the preceding ones, subcylindrical, truncate at apex, constricted towards the base. Seventh joint fusiform, longer and narrower than any of the preceding segments, about three times as long as wide, transversely truncate at apex. Eighth joint the narrowest of all, a little shorter than the middle segments, conical, but somewhat constricted at base.

All bristles short and weak. Sense area of the second segment close behind its middle. Sense cones hyaline, shorter than half the length of their joints, those of posterior margin a little longer

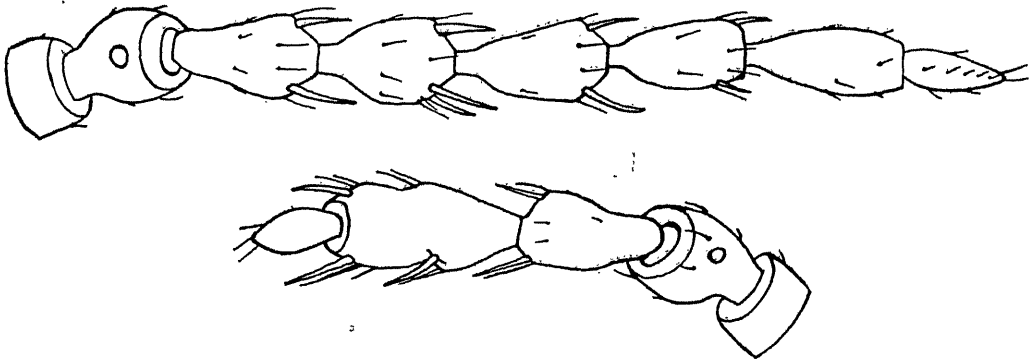


Fig. 6. *Eothrips hyalopterus*. Normal and anomalous antenna (of the same specimen).
 than the anterior ones. Sense cones of sixth segment shorter than the others, the posterior still shorter than the anterior one. Seventh segment with no conspicuous sense cone.

There is amongst the material before me one female with an anomalous antenna of very remarkable shape. The three basal joints shaped as usual, the fourth very long, apparently representing two joints entirely grown together, distinctly constricted at middle, with a sense cone before this constriction and another on each side before the end. This curiously shaped joint is followed by only one very small, fusiform apical segment.

Prothorax somewhat shorter than head, twice as wide (across fore coxae) as long. Bristles weak and short, sharply pointed. The posterolateral ones not quite half as long as prothorax, posteromarginal setae scarcely half as long as the former ones. Anterolateral bristles still shorter and weaker, directed forwards, mediolateral ones still shorter, hair-like, inserted in the midst between those of fore and hind angles. Anteromarginal setae not conspicuous. Fore femora about as long as head, in both sexes a little more than half as wide as long. Tarsi (except the apical claw) without teeth.

Pterothorax a little wider than prothorax across fore coxae, nearly as long as wide, with protruding fore angles, sides of meso- and metathorax arched and converging backwards. Sutures of mesosternum form a small rectangular triangle, defined backwards by the hind margin of mesosternum, with the right angle directed forwards and going off from it a short median line. Sutures of metasternum consisting of two oblique lines, forming a right angle with each other, but neither reaching to the hind coxae, nor to the tip of the angle. Hind coxae somewhat more approximated than the middle ones. Middle and hind legs moderately long and stout. Tarsi not toothed.

Wings clear, hyaline, at extreme base brown, not constricted at the middle, reaching to the sixth abdominal segment. Bristles at base of fore pair very weak and short, hind margin with 15-20 duplicated cilia.

Abdomen somewhat wider than pterothorax, about three times as long as wide. All bristles short and weak, pointed at apex. Those of segments 7-9 somewhat longer, nearly as long as the ninth segment. Sides of eighth segment in basal half nearly parallel, then abruptly strongly converging from middle to apex. Tube a little

shorter than head, with strongly converging sides; its width at base about two-fifths of its length, and nearly three times its width at apex. Terminal bristles very short and weak, not quite one-third as long as the tube itself.

Measurements:—Total length of antennae 0.37 mm. I. joint 0.02 mm. long, 0.35 mm. wide; II. joint 0.04 mm. long, 0.03 mm. wide; III. joint 0.05 mm. long, 0.03 mm. wide; IV. joint 0.055 mm. long, 0.035 mm. wide; V. joint 0.05 mm. long, 0.03 mm. wide; VI. joint 0.055 mm. long, 0.025 mm. wide; VII. joint 0.06 mm. long, 0.20 mm. wide; VIII. joint 0.045 mm. long, 0.015 mm. wide. Head 0.20 mm. long, 0.18 mm. wide. Prothorax 0.16 mm. long, 0.31 mm. wide (across fore coxae). Fore femora 0.20 mm. long, 0.11 mm. wide; fore tibiae (including tarsi) 0.17 mm. long, 0.05 mm. wide. Pterothorax 0.30 mm. long, 0.33 mm. wide. Middle femora 0.15 mm. long, 0.05 mm. wide; middle tibiae (including tarsi) 0.20 mm. long, 0.05 mm. wide. Hind femora 0.21 mm. long, 0.07 mm. wide; hind tibiae (including tarsi) 0.28 mm. long, 0.05 mm. wide. Length of wings (without fringe) 1.0 mm. Abdomen (including tube) 1.25 mm. long, 0.38 mm. wide. Length of tube 0.18 mm., width at base 0.07 mm., at apex 0.025 mm. Total length (female, male) 1.7—2.2 mm.

This species was collected by Mr. DOCTERS v. LEEUWEN in a leaf gall on ? ? *Hymenodictyon parviflorum* OLIVER (No. 74) at Vinh Huo (Indochina), dated 26. X. 1920.

Differs from all similar species (*taurus*, *nervisequus seticornis* and *decipiens*) by its very weak bristles, the clear, hyaline wings, and the great number of double fringe-hairs.

19. *Chelaeothrips annamensis* KARNY.

1922. KARNY, Beitr. mal. Thys., VIII.—Treubia, III, 1.

I have already described this very remarkable new genus in the paper mentioned above. Collected by Mr. DOCTERS V. LEEUWEN in a leaf gall on an undetermined plant (No. 68) at Krompha, Annam, dated 23. X. 1920.

Subfamily *Cryptothripinae* KARNY.20. *Androthrips melastomae* ZIMMERMANN.

1900. ZIMMERMANN, Bull. Inst. Bot. Buitenzong, VII, p. 17
(*Mesothrips*).

1922. KARNY, Beitr. mal. Thys., VIII.—Treubia, III, 1. (with list of literature).

I have suggested in Treubia I, 4. p. 281, that the so-called "*Androthrips melastomae*" from different food plants may represent probably different species. And the more material of *Androthrips* I receive, the more I find this supposition confirmed. But because *Androthrips* is generally rather rare, I have not yet obtained sufficient material to define these species satisfactorily. ZIMMERMANN has described the species from *Chavica densa* and *Melastoma polyanthum*, stating that the tibiae were yellow. In the Further Indian material before me, there is one specimen from *Melastoma malabathricum* L. (No. 42) having the middle and hind tibiae brown, collected by Mr. DOCTERS V. LEEUWEN at Klong Chang, Siam, dated 1. X. 1920 (together with *Mesothrips jordani* and *Gynaikothrips chavicae*); further two specimens from *Ficus benjamina* L. (No. 48;) Bangkok; 3. X. 1920; leg. DOCTERS v. LEEUWEN together with *Gynaikothripsuzeli* and *G. sp.*—No. 78; Saigon; 28. X. 1920; leg. DOCTERS v. LEEUWEN together with *Gynaikothripsuzeli*, *Mesothrips jordani* and *Leptothrips constrictus*). These two specimens from *Ficus* have all tibiae yellow and the antennal joints considerably narrower than the specimen from *Melastoma*. I hope to get in time more material, and to be able to decide these questions exactly.

Androthrips melastomae was hitherto known from Java and Celebes (Saleier).

21. *Coryphothrips trochiceps* KARNY.

1920. KARNY, Beitr. mal. Thys., VIII.—Treubia, III, 1.

Representing a new genus already described in the above mentioned publication. Collected by Mr. DOCTERS v. LEEUWEN in leaf galls on *Dipterocarpus alatus* ROXB. (No. 49; 7. X. 1920.—No. 54; 9. X. 1920) at Bangkok, Siam, together with *Gynaikothrips siamensis*.

22. **Leptothrips constrictus** KARNY.

1912. KARNY, Marcellia, XI, p. 150.

1922. KARNY, Beitr. mal. Thys., VII.—Treubia, III, 1. (with list of literature).

In leaf galls on *Ficus retusa* L. (No. 51; Bangkok; 9. X. 1920; together with *Gynaikothripsuzeli*) and *F. benjamina* L. (No. 78; Saigon; 28. X. 1920; together with *Mesothrips jordani*, *Gynaikothripsuzeli* and *Androthrips melastomae*), collected by Mr. DOCTERS v. LEEUWEN.

It is not impossible, that *constrictus* may be proved at a future time to be only a micromerous form of *Mesothrips jordani*, likely the *f. debilis* of *M. pyctes* or the smaller form of *Haplothrips braccatus* ♂ and *Thaumatothrips froggatti*.

Further distribution: Java, Celebes.

23. **Gynaikothrips fuscipes** *n.sp.*

Female. Male.—Black. Fore tibiae dark brown at base, gradually paler towards the apex. All tarsi yellowish brown. First antennal joint and base of second black; second segment gradually paler towards the apex. The following joints pale lemon yellow, sixth greyish before the apex, seventh in the distal half. Eighth joint entirely brownish grey. Wings (except extreme base) clear, hyaline.

Head one and one-fifth times as long as wide; cheeks nearly straight, distinctly converging from eyes to hind margin, finely granulated and set with a few short hairs. Eyes moderately large, occupying about one-third of the length of head. Posterior ocelli placed close to the inner margin of eyes before their middle, anterior one directed forwards. Postocular bristles inserted close behind the hind margin of eyes, blunt, very slightly dilated at extreme apex, not quite half as long as eyes. Mouth cone reaching a little across the middle of prosternum, with short palpi. The maxillary ones not quite half as long as mouth cone, with an annular basal and a narrow, cylindrical apical joint.

Antennae nearly twice as long as head, inserted close to the fore margin of eyes; fore head between them scarcely produced.

First joint wider than long; second one cup-shaped, as wide as the first, and about one and a half times as long as wide. The following joints clavate, the third narrower than the preceding one, about three times as long as wide. Segment 4 a little shorter and wider than 3. Joints 5-8 still shorter than the fourth, equal in length, gradually diminishing in width; 7 and 8 fusiform, the latter distinctly constricted at base, not broadly jointed with the preceding one. All bristles weak and short; the longitudinal apical line with 3 bristles before the apex of seventh joint, then interrupted at base of eighth and beginning again a little before the middle of apical joint. Sense cones inconspicuous, hardly longer than the bristles, about one-fourth of the length of their joints.

Prothorax shorter than head, distinctly widened backwards, across fore coxae about twice as wide as long. Posterolateral bristles curved backwards, blunt at apex, nearly half as long as prothorax. Posteromarginal setae straight, inserted not far from the hind angles, about two-thirds as long as the posterolateral ones, at apex shaped as the postocular bristles. Mediolateral and anterolateral ones of the same shape, but scarcely half as long as those of the hind angles. Anterolateral bristles inserted somewhat far behind the fore angles; anteromarginal ones still shorter and weaker, inserted before and a little inwards from the anterolateral setae.

Fore coxae rounded, with a bristle of about the same shape and length as the mediolateral ones. Femora shorter than head, about three times as long as wide. Tarsi not toothed.

Pterothorax a little wider than the prothorax across fore coxae, about as long as wide, with rounded fore angles, and nearly straight sides somewhat converging backwards. Sutures of meso- and metasternum as in *Eothrips hyalopterus*. Hind coxae larger and considerably more approximated to one another than the middle ones. Middle and hind legs moderately stout, with a long hair on the outer margin before the end of tibiae. Tarsi without teeth.

Wings reaching about to the sixth or seventh abdominal segment, not constricted at the middle, brown at extreme base, further on entirely clear, hyaline. Fore pair along the abortive basal vein with three bristles, about half as long as the wing is wide, and a very little dilated at apex. Bristle 1 inserted on the vein, 2 and 3

behind the vein, second closer to the first than to the third. Hind margin with about 20 double fringe-hairs.

Abdomen a little narrower than pterothorax, about four times as long as wide. Bristles hyaline, blunt at apex, nearly as long as the segments themselves. Those of the ninth segment sharply pointed, nearly as long as the tube. This distinctly shorter than head, about three times as long as wide at base, with straight, backwards converging sides; at apex about half as wide as at base. Terminal bristles hair-like, sharply pointed, the longer ones a little shorter than the tube itself, the shorter scarcely half as long as the others.

Measurements of female:—Total length of antennae 0'48 mm. I. joint 0'025 mm. long, 0'035 mm. wide; II. joint 0'05 mm. long, 0'035 mm. wide; III. joint 0'08 mm. long, 0'025 mm. wide; IV. joint 0'07 mm. long, 0'035 mm. wide; V. joint 0'065 mm. long, 0'035 mm. wide; VI. joint 0'065 mm. long, 0'025 mm. wide; VII. joint 0'065 mm. long, 0'02 mm. wide; VIII. joint 0'065 mm. long, 0'01 mm. wide. Head 0'25 mm. long, 0'20 mm. wide. Prothorax 0'18 mm. long, 0'25 mm. wide (across fore coxae.) Fore femora 0'22 mm. long, 0'07 mm. wide; fore tibiae (including tarsi) 0'24 mm. long, 0'04 mm. wide. Pterothorax 0'35 mm. long, 0'37 mm. wide. Middle femora 0'15 mm. long, 0'05 mm. wide; middle tibiae (including tarsi) 0'17 mm. long, 0'04 mm. wide. Hind femora 0'21 mm. long, 0'05 mm. wide; hind tibiae (including tarsi) 0'26 mm. long, 0'04 mm. wide. Length of wings (without fringe) 0'95 mm. Abdomen (including tube) 1'4 mm. long, 0'36 mm. wide. Length of tube 0'22 mm. width at base 0'08 mm. at apex 0'04 mm. Total length 2'1–2'3 mm.

Measurements of male:—Total length of antennae 0'39 mm. I. joint 0'015 mm. long, 0'025 mm. wide; II. joint 0'04 mm. long, 0'025 mm. wide; III. joint 0'06 mm. long, 0'02 mm. wide; IV. joint 0'06 mm. long, 0'03 mm. wide; V. joint 0'055 mm. long, 0'025 mm. wide; VI. joint 0'055 mm. long, 0'02 mm. wide; VII. joint 0'055 mm. long, 0'015 mm. wide; VIII. joint 0'055 mm. long, 0'01 mm. wide. Head 0'21 mm. long, 0'17 mm. wide. Prothorax 0'13 mm. long, 0'25 mm. wide (across fore coxae.) Fore femora 0'17 mm. long, 0'06 mm. wide; fore tibiae (including tarsi) 0'18 mm. long, 0'035

mm. wide. Pterothorax 0'30 mm. long, 0'28 mm. wide. Middle femora 0'14 mm. long, 0'04 mm. wide; middle tibiae (including tarsi) 0'15 mm. long, 0'04 mm. wide. Hind femora 0'19 mm. long, 0'04 mm. wide; hind tibiae (including tarsi) 0'20 mm. long, 0'035 mm. wide. Length of wings (without fringe) 0'8 mm. Abdomen (including tube) 0'9 mm. long, 0'23 mm. wide. Length of tube 0'15 mm. width at base 0'05 mm. at apex 0'03 mm. Total length 1'5-1.7 mm.

Collected by Mr. DOCTERS v. LEEUWEN between the hairs of petioles on *Dipterocarpus* sp. (No. 62) at Saigon, Cape St. Jacques, dated 21. X. 1920.

This species forms with *G. longicornis* and the African *G. ebneri* a peculiar group, characterized by the short head and the relatively long antennae, which is somewhat intermediate between *Gynaikothrips* and *Eothrips* but may rather be placed to the former genus. *G. fuscipes* differs from *longicornis* by its dark middle and hind tibiae, from *ebneri* by the clear wings furnished with duplicated cilia. Of the other *Gynaikothrips*-species it reminds one somewhat of *adusticornis* and *claripennis*, but may be distinguished from them at once by the very characteristic shape of the last antennal joint and by the shorter head.

24. *Gynaikothrips daetymon* KARNY.

1922. KARNY, Beitr. mal. Thya., VIII.-Treubia III, 1.

In the leaf galls of *Leeuwenia aculeatrix* on *Eugenia* sp. (No. 77), collected by Mr. DOCTERS v. LEEUWEN at Saigon, Cochinchina, dated 28. X. 1920.

25. *Gynaikothrips siamensis* KARNY.

1922. KARNY, Beitr. mal. Thys., VIII.-Threubia, III, 1.

In leaf galls on *Dipterocarpus alatus* ROXB. (No. 49; 7. X. 1920.-No. 54; 9. X. 1920), collected by Mr. DOCTERS v. LEEUWEN at Bangkok, Siam, together with *Coryphotrips trochiceps*.

26. **Gynaikothrips primitivus** *n.sp.* (Fig. 7).

Female.-Male.- General colour as in *G. fuscipes*, but the second antennal segment a very little paler at apex; joints 3-5 lemon yellow, somewhat shaded with grey before the apex; sixth segment dark blackish brown in the apical half, 7 and 8 entirely blackish. Wings brown at extreme base, further on their whole surface shaded with greyish, especially along the margins.

Head one and a half times as long as wide, somewhat constricted at the hind margin of eyes, cheeks finely granulated and set with a few short hairs, very little arched, converging backwards. Eyes large, occupying one-third of the length of head. Postocular bristles stout, straight, sharply pointed at apex, inserted close behind the hind margin of eyes, reaching forward not to the middle of eyes. Mouth cone broadly rounded, reaching hardly to the middle of prosternum.

Antennae one and two-thirds times as long as head, inserted very near the fore margin of head; between them the fore head scarcely produced. First joint nearly cylindrical, widest at base, somewhat wider than long. Second joint cup-shaped, as wide as the first, somewhat longer than wide. The following segments clavate, about

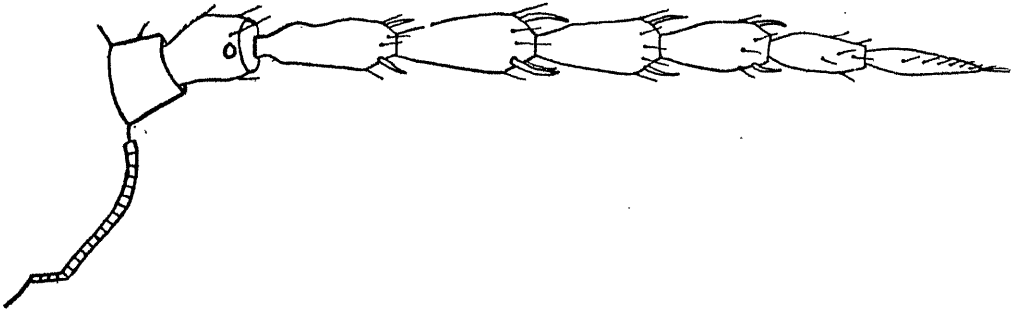


Fig. 7. Antenna of *Gynaikothrips primitivus*.

two and a half times as long as wide, a little narrower than 2, sixth a little shorter and narrow than the preceding ones. Seventh and eighth joint fusiform, the former some what shorter and narrower than 6; the eighth narrower and a little longer than 7, distinctly constricted at base, not broadly united with the preceding joint.

First segment on the inner side before the end with a short, stout bristle. The following segments with a crown of short bristles before the end. Sense area of second joint placed close before the apical margin. All sense cones short, hyaline, somewhat curved. Seventh segment in distal half with some short, weak bristles, eighth with a median longitudinal line of such beginning before the middle of this segment and reaching to its tip.

Prothorax two-thirds as long as head, strongly widened posteriorly, across fore coxae not quite twice as wide as long. Bristles stout, sharply pointed; the posterolateral and posteromarginal ones about half as long as prothorax, mediolateral ones a little shorter. Anterolateral and anteromarginal bristles not visible. Fore coxae rounded, with a stout, pointed bristle, about half as long as the posterolateral ones. Fore femora distinctly shorter than head, somewhat dilated, twice as long as wide. Fore tarsi without tooth.

Pterothorax a little wider than prothorax across fore coxae, scarcely longer than wide, with rounded fore angles, sides of meso- and metathorax very slightly arched, nearly parallel. Sutures of meso- and metasternum much as in *Eothrips hyalopterus*, but the mesosternal triangle more acute, and the metasternal angle divided by a backwardly directed, median line. Middle coxae smaller than the hind ones, and nearly twice as widely separated from each other. Middle and hind legs moderately long and stout; tarsi not toothed.

Wings reaching about to the seventh abdominal segment, not constricted at the middle, somewhat infumate. Fore pair with three sharply pointed bristles at base near the fore margin, the second of them a little farther from the third than from the first, equal in length, about half as long as the wings is broad. Hind margin before apex with about 16 duplicated cilia.

Abdomen about as wide as pterothorax, more than three times as long as wide. All bristles dark, very long and stout, sharply pointed at apex. Even the first segment with a stout, laterally or forwards directed bristle. Those of segments 2.—4 not quite as long as this, those of 5.—8. longer than their segments themselves. Bristles of ninth segment as long as the tube or a little longer. Tube short and stout, about two-thirds of the length of head, with straight, distinctly converging sides, at base not quite half

as wide as long and a little more than twice as wide as at apex. The longer terminal bristles stout at base, hair-like in distal half, nearly as long as the tube; the shorter ones hair-like, not quite one-third of the length of the others.

Measurements:—Total length of antennae 0.51 mm. I. joint 0.03 mm. long, 0.04 mm. wide; II. joint 0.05 mm. long, 0.04 mm. wide; III. joint 0.085 mm. long, 0.035 mm. wide; IV. joint 0.08 mm. long, 0.035 mm. wide; V. joint 0.075 mm. long, 0.035 mm. wide; VI. joint 0.07 mm. long, 0.03 mm. wide; VII. joint 0.06 mm. long, 0.025 mm. wide; VIII. joint 0.065 mm. long, 0.015 mm. wide. Head 0.30 mm. long, 0.21 mm. wide. Prothorax 0.20 mm. long, 0.36 mm. wide (across fore coxae). Fore femora 0.24 mm. long, 0.12 mm. wide; fore tibiae (including tarsi) 0.23 mm. long, 0.06 mm. wide. Pterothorax 0.41 mm. long, 0.39 mm. wide. Middle femora 0.19 mm. long, 0.08 mm. wide; middle tibiae (including tarsi) 0.23 mm. long, 0.05 mm. wide. Hind femora 0.24 mm. long, 0.08 mm. wide; hind tibiae (including tarsi) 0.25 mm. long, 0.06 mm. wide. Length of wings (without fringe) 1.15 mm. Abdomen (including tube) 1.3 mm. long, 0.4 mm. wide. Length of tube 0.21 mm. width at base 0.09 mm. at apex 0.04 mm. Total length 2.0—2.7 mm.

Mr. DOCTERS v. LEEUWEN collected this interesting species at Dalat, Annam (\pm 1500 m; 23. X. 1920) in leaf-gall on ?? *Symplocos* (No. 71), together with *Gynaikothrips adusticornis*.

The length and fusiform shape of the last antennal joint is a very remarkable and primitive character of *primitivus*, which separates it at once from all similar species (*adusticornis*, *lividicornis*, *simillimus* and *leeuwenii*), and suggests *G. fuscipes*; but the latter has the head considerably shorter than *primitivus*.

27. *Gynaikothrips leeuwenii* KARNY.

1914. DOCTERS v. LEEUWEN-REIJNVAAN, Bull. Jard. Bot.

Buitenzorg (2) XV, p. 46 (without name).

1914. KARNY AND DOCTERS v. LEEUWEN-REIJNVAAN,

Zeitschr. wiss. Ins.—Biol., X, p. 206 (without name).

1916. DOCTERS v. LEEUWEN-REIJNVAAN, Bull. Jard. Bot.

Buitenzorg (2) XXI, p. 37 (without name).

1922. KARNY, Beitr. mal. Thys., VII.—Treubia, III, 1.

Collected by Mr. DOCTERS v. LEEUWEN in leaf galls on *Pavetta indica* L. (No. 63), in native forest near Saigon, Cape St. Jacques, dated 21. X. 1920, together with *Haplothrips inquilinus*. One of the specimens before me has a small, curved foretarsal tooth, but otherwise not differing from the others.

Further distribution: Java and Celebes (Salcier).

28. *Gynaikothrips chavicoe* ZIMMERMANN.

- 1900. ZIMMERMANN, Bull. Inst. Bot. Buitenzorg, VII, p. 14
(*Mesothrips*).
- 1909. DOCTERS v. LEEUWEN, Mededeel. Alg. Proefstat.
Salatiga (2) 25, p. 1-6 (without name).
- 1909. DOCTERS v. LEEUWEN-REIJNVAAN, Marcellia, VIII,
p. 108 (*Mesothrips*), 113.
- 1910. DOCTERS v. LEEUWEN-REIJNVAAN, Marcellia, IX, p.
54 (without name).
- 1911. KARNY, Centralbl. Bakter., II. Abt., xxx, p. 559-562.
- 1912. KARNY, Marcellia, XI, p. 131.
- 1913. KARNY AND DOCTERS v. LEEUWEN-REIJNVAAN,
Bull. Jard. Bot. Buitenzorg, (2) X, p. 11, 17, 24, 108, 109.
- 1914. DOCTERS v. LEEUWEN-REIJNVAAN, Bull. Jard. Bot.
Buitenzorg, (2) XV, p. 35, 47, 48.
- 1914-1916. KARNY AND DOCTERS v. LEEUWEN-REIJNVAAN,
Zeitschr. wiss. Ins.-Biol., X, p. 205, 206, 290; XI, p.
325; XII, p. 18.
- 1916. DOCTERS v. LEEUWEN-REIJNVAAN, Bull. Jard. Bot.
Buitenzorg, (2) XXI, p. 17.
- 1919. DAMMERMAN, Landbouwdierkunde, p. 154.
- 1919. UICHANCO, Philipp. Journ. Sci., XIV, 5, p. 548; Pl.
XV, fig. 7.

Some specimens collected by Mr. DOCTERS v. LEEUWEN in leaf galls on *Melastoma malabathricum* L. (No. 42) at Klong Chang, Siam, together with many *Mesothrips jordani* and one *Androthrips melastomae*, dated 1. X. 1920.

Further distribution: Java, Sumatra, Philippine Islands, Celebes.

29. **Gynaikothrips maximus** *n.sp.*

Female.—General colour as in *G. primitivus*, but the third antennal joint not shaded with grey, 4-6 a little less than in that species. Wings greyish, especially at base, and darker along the median longitudinal line.

Head nearly one and one-third times as long as wide, cheeks very finely granulated and set with a few very short hairs, converging backwards and somewhat constricted before the hind margin. Eyes large, occupying about one third of the length of head. Postocular bristles inserted in the middle of sides of head, sharply pointed, somewhat shorter than the eyes, not quite reaching to their middle. Mouth-cone broadly rounded, reaching about to the middle of prosternum.

Antennae one and five-sixths times as long as head; fore head between them hardly wider than the space between their outer margin and the eyes. First joint truncate conical, a little more than half as long as wide at base. Second joint nearly cylindrical, constricted at base, distinctly narrower than the preceding one and nearly twice as long as wide. The following ones clavate, about as wide as the second and one and a half times as long, two and a half times as long as wide. Seventh joint fusiform, truncate at apex, distinctly narrower than the preceding ones, nearly three times as long as wide. Eighth segment conical, broadly jointed with seventh, a little more than half as long and wide as this.

First joint with a short bristle on inner margin. Segments 2-5 with a crown of very short, hair-like bristles just before their middle and a second of longer and stouter ones before apex. Sixth joint in distal half, and seventh and eighth nearly throughout their whole length, set with bristles,

Sense area of second joint circular, very small, placed close before the apical margin. Sense cones slender, sharply pointed, somewhat curved, on segment 3 and 4 about as long as the bristles of apical crown, not quite half as long as their segments. Sense cones of fifth joint reaching to the middle of sixth, sense cone of the latter considerably over reaching the middle of seventh segment.

Prothorax three-fourths as long as head, strongly widened backwards, across fore coxae twice as wide as long. Posterolateral and postesomarginal bristles stout and sharply pointed, about half as long as prothorax. Mediolateral setae inserted in the middle of prothoracic sides, stout, sharply pointed and angularly curved at apex, about half as long as those of hind angles. Anterolateral bristles short and stout, not longer than the mediolateral ones, somewhat blunt at apex. Coxal bristle straight and stout, half as long as the posterolateral ones, rather pointed at apex. Fore legs moderately long and slender, their femora somewhat shorter than the head, and nearly three times as long as wide. Tarsi not toothed.

Pterothorax somewhat wider than prothorax across fore coxae, a little longer than wide, with rounded fore angles, and arched sides of meso- and metathorax. Sutures of mesosternum as in *Eolthrips laticeps*, those of metasternum as in *E. hyalopterus*. Middle and hind legs long, set with short hairs along both margins and with some longer, stouter bristles before the end of tibiae. Tarsi without teeth.

Wings not constricted in the middle, infumate, especially along the median line, reaching about to the base of seventh abdominal segment. Fore pair at base near the fore margin with three long, stout, sharply pointed, equidistant bristles, about as long as the wing is broad. Hind margin before the apex with 18 double fringe-hairs.

Abdomen a little wider than pterothorax, four and a half times as long as wide. All bristles dark, stout, sharply pointed at apex, on segments 2-4 a little shorter than the segments themselves, on 5-8 somewhat longer, on ninth shorter than the tube. Wing-retaining spines well developed, distinctly S-shaped, the posterior ones on the fourth segment fully as long as the distance between their tips, on the sixth already distinctly shorter. Tube stout, as long as the head, three times as long as wide at base; at apex half as wide as at base. Terminal bristles as in *G. primitivus*.

Measurements of female:—Total length of antennae 0.55 mm. I. joint 0.03 mm. long, 0.05 mm. wide; II. joint 0.06 mm. long, 0.035 mm. wide; III. joint 0.095 mm. long, 0.035 mm. wide; IV. joint 0.10 mm. long, 0.04 mm. wide; V. joint 0.09 mm. long, 0.04 mm.

wide; VI. joint 0'08 mm. long, 0'035 mm. wide; VII. joint 0'065 mm. long, 0'025 mm. wide; VIII joint 0'035 mm. long, 0'15 mm. wide. Head 0'30 mm. long, 0'24 mm. wide. Prothorax 0'22 mm. long, 0'45 mm. wide (across fore coxae). Fore femora 0'28 mm. long, 0'10 mm. wide; fore tibiae (including tarsi) 0'30 mm. long 0'06 mm. wide. Pterothorax 0'50 mm. long, 0'48 mm. wide. Middle femora 0'27 mm. long 0'07 mm. wide; middle tibiae (including tarsi) 0'29 mm. long, 0'05 mm. wide. Hind femora 0'32 mm. long, 0'09 mm. wide; hind tibiae (including tarsi) 0'38 mm. long 0'06 mm. wide. Length of wings (without fringe) 1'35 mm. Abdomen (including tube) 2'3 mm. long, 0'52 mm. wide. Length of tube 0'30 mm., width at base 0'10 mm., at apex 0'05 mm. Total length 2'7-3'6 mm.

In leaf galls on an undetermined plant (No. 72) collected by Mr. DOCTERS v. LEEUWEN at Dalat Lang Bien, Indochina, \pm 1500 m. dated 25. X. 1920.

This new species comes nearest to *G. tristis*, *convolvens* and *cognatus*, but differs from these at once by its distinctly larger size, from *tristis* moreover by the darker end of antennae, the longer and more slender tube and the greater number of duplicated cilia, from *convolvens* by the stouter antennal joints and the different length and shape of sense cones, from *cognatus* by the wings not uniformly infumate, but darker along the median line.

30. *Gynaikothripis rectigenis* n.sp.

Female :—General colour brownish black, fore tibiae and all tarsi brownish yellow. First antennal joint as dark as body, second also as dark at base, but gradually paler towards the apex. The following joints uniformly pale lemon yellow, sixth a little darker towards the apex, seventh shaded with grey, eighth a little darker, brownish grey. Wings coloured as in the preceding species.

Head nearly one and a half times as wide; cheeks straight, nearly parallel, finely granulated and set with some very short hairs. Eyes large, black, occupying somewhat more than one-third of the length of head, with rounded hind margin. Ocelli arranged in a rectangular triangle; the anterior one between the insertion of antennae directed forwards, the posterior ones touching the inner-margin of eyes distinctly before its middle. Postocular bristles short

and stout, a little dilated at apex, not reaching to the hind margin of eyes; the distance between their insertion and the margin of eyes distinctly more than half the length of eyes.

Antennae about one and a half times as long as head, inserted close to the fore margin of eyes. First joint nearly cylindrical, distinctly wider than long. Second segment cup-shaped, as wide as the first and somewhat longer than wide. The following joints a little narrower, somewhat more than twice as long as wide, about equal in length and width, only the fourth one a little longer and wider than the others. Third joint distinctly clavate, 4-6 more rounded, nearly fusiform, but widest behind the middle. Seventh joint fusiform, widest before its middle, distinctly narrower than the preceding ones, and twice as long as wide. Eighth segment conical, broadly jointed with the seventh, about half as wide as this, and nearly three times as long as wide.

Chaetotaxy of antennae as in the preceding species; the median, apical bristle line reaching from middle of seventh to apex of eighth joint. Sense area of second segment transversely ovate, placed close behind its middle. Sense cones similar to the preceding species, those on fifth and sixth joint more slender, but not distinctly longer than on 3 and 4; sense cones of fifth segment not reaching to the middle of sixth, those of the latter exactly to middle of seventh.

Front before the base of mouth cone with a pair of short bristles. Labrum triangular, sharply pointed, reaching nearly to the hind margin of prosternum, and distinctly overreaching the rounded labium. Maxillary palpi long and slender, about half as long as mouth cone, with a short basal and a cylindrical apical joint, about six times as long as wide. Labial palpi scarcely half as long as the maxillary ones, reaching from the end of labium to tip of labrum.

Prothorax about two-thirds as long as head, across fore coxae nearly twice as wide as long. All bristles dark, stout, somewhat dilated at apex. The posterolateral ones nearly half as long as prothorax; posteromarginal bristles of the same length, from the middle line twice as far distant as from the outer setae. Antero-marginal bristles half as long as those, inserted in the midst between

the median line and the fore angles. Anterolateral bristles still shorter, somewhat removed backwards from the fore margin. Mediolateral setae a little longer than the anteromarginal ones, twice as far distant from the hind as from the fore angles.

Prosternum with a distinct, dotted sculpture, except on the following smooth, strongly chitinized plates: one narrow rhomboidal, longitudinally placed plate near each fore angle, one very small triangular plate on each side of mouth cone, a pair of larger, irregularly trapezoidal plates before the hind margin and a small, transversely ovate plate behind them in the middle line. Fore coxae broadly rounded, their bristle stout, a little dilated at apex, but not quite half as long as the posterolateral ones. Fore femora hardly as long as prothorax, full half as wide as long, along the outer margin set with some short hairs. Fore tibiae long and stout, tarsi not toothed.

Pterothorax distinctly wider than prothorax across fore coxae, as long as wide, with rounded fore angles, and somewhat arched sides. Sutures of meso- and metasternum, and the middle and hind legs as in the preceding species.

Wings reaching to the seventh abdominal segment, not constricted at the middle, coloured as in *G. maximus*; fore pair with three equidistant bristles along the abortive basal vein, a little dilated at apex, and more than half as long as the wing is wide. Hind margin with 10-12 duplicated fringe-hairs.

Abdomen nearly as wide as pterothorax, not quite four times as long as wide. Bristles stout, dilated at apex, those of the first segment reaching nearly to the midst of second. Segments 2-6 with the bristles more than half as long as the segments themselves. The outer setae of segment 7 and 8 blunt, not distinctly dilated at apex, about as long as their segments. Bristles of ninth segment sharply pointed, a little shorter than tube. The posterior wing retaining spines well developed, distinctly S-shaped; on segments 4 and 5 fully as long as the distance between their tips, on 3 somewhat shorter, on 2 still shorter, about half as long as this distance. Tube about three-fourths as long as head, with straight, backwards converging sides, at base not quite half as wide as long, and a little more than twice as wide as at apex. Terminal bristles hair-like, the

longer ones about half as long as the tube, the shorter ones half as long as the others.

Measurements of female:—Total length of antennae 0'45 mm. I. joint 0'03 mm. long, 0'04 mm. wide; II. joint 0'05 mm. long, 0'04 mm. wide; III. joint 0'07 mm. long, 0'03 mm. wide; IV. joint 0'075 mm. long, 0'035 mm. wide; V. joint 0'07 mm. long, 0'03 mm. wide; VI. joint 0'07 mm. long, 0'03 mm. wide; VII. joint 0'05 mm. long, 0'025 mm. wide; VIII. joint 0'035 mm. long, 0'013 mm. wide. Head 0'29 mm. long, 0'20 mm. wide. Prothorax 0'20 mm. long, 0'38 mm. wide (across fore coxae). Fore femora 0'19 mm. long, 0'10 mm. wide; fore tibiae (including tarsi) 0'23 mm. long, 0'05 mm. wide. Pterothorax 0'43 mm. long and wide. Middle femora 0'20 mm. long, 0'06 mm. wide; middle tibiae (including tarsi) 0'29 mm. long, 0'04 mm. wide. Hind femora 0'25 mm. long, 0'07 mm. wide; hind tibiae (including tarsi) 0'32 mm. long, 0'04 mm. wide. Length of wings (without fringe) 1'05 mm. Abdomen (including tube) 1'5 mm. long, 0'41 mm. wide. Length of tube 0'22 mm., width at base 0'09 mm., at apex 0'04 mm. Total length 2'0-2'4 mm.

Three specimens collected by Mr. DOCTERS v. LEEUWEN in leaf galls on *Vernonia elaeagnifolia* D. C. (No. 45) at Tachoi, Southern Siam, dated 1. X. 1920.

This species comes nearest to *G. longiceps*, but has the sides of head more parallel and the antennae much slenderer. The shape of head suggests somewhat the Ceylonese *G. watsoni*, but this has a different coloration of antennae.

31. *Gynaikothrips longiceps* KARNY.

1914-1916. KARNY AND DOCTERS v. LEEUWEN-REIJNVAAN, Zeitschr. wiss. Ins.-Biol., X. p. 207; XI. p. 325; XII. p. 19.

1914. DOCTERS v. LEEUWEN-REIJNVAAN, Bull. Jard. Bot. Buitenzorg (2) XV. p. 48.

I refer to this species, with some doubt, one specimen from *Ficus*, which should perhaps rather represent a separate new species in the vicinity of *longiceps* and *convolvens*. I am not able to decide this from the single, somewhat damaged specimen.

Collected by Mr. DOCTERS v. LEEUWEN in a leaf gall on *Ficus benjamina* L. (No. 48) at Bangkok (3. X, 1923), together with *Gynaikothrips uzeli* and one *Androthrips melastomae*.

Distribution of *G. longiceps*: Java.

32. *Gynaikothrips adusticornis* KARNY.

1914-1916. KARNY AND DOCTERS v. LEEUWEN-REIJNVAAN, Zeitschr. wiss. Ins.—Biol., X, p. 206; XI, p. 325; XII, p. 21.

1914. DOCTERS v. LEEUWEN-REIJNVAAN, Bull. Jard. Bot. Buitenzorg (2) XV, p. 30.

One specimen in a leaf gall on ?? *Symplocos* (No. 71) together with *Gynaikothrips primitivus*, collected by Mr. DOCTERS v. LEEUWEN at Dalat, Annam (± 1500 m.); 23. X. 1920.

The species was hitherto only recorded from Java.

33. *Gynaikothrips lividicornis* KARNY.

1922. KARNY, Beitr. mal. Thys., VII.—Treubia, III, 1.

Collected by Mr. DOCTERS v. LEEUWEN in a leaf gall on *Rhodamnia trinervia* Bl. (No. 65) at Saigon, Cape St. Jacques, dated 25. X. 1920.

The species was originally described from Celebes (Kalao Foa and Bonerate).

34. *Gynaikothrips claripennis* KARNY.

1914-1916. KARNY AND DOCTERS v. LEEUWEN-REIJNVAAN, Zeitschr. wiss. Ins.—Biol., X, p. 203; XI, p. 325-327; XII, p. 84.

1914. DOCTERS v. LEEUWEN-REIJNVAAN, Bull. Jard. Bot. Buitenzorg (2) XV, p. 51.

Collected by Mr. DOCTERS v. LEEUWEN in leaf galls on an undetermined plant (No. 41) at Patalung, Southern Siam (30. IX. 1920.) and on ? *Salacia* (No. 59) near Saigon (native forest Tri Han; 19. X. 1920).

Further distribution: Java.

35. *Gynaikothrips uzeli* ZIMMERMANN.

1900. ZIMMERMANN, Bull. Inst. Bot. Buitenzorg, VII, p. 12
(*Mésothrips*) p. 13 (*Gynaikothrips*).

1922. KARNY, Beitr. mal. Thys., VII,—Treubia, III, 1, (with
list of synonymy and literature).

This common and widely distributed species was collected by Mr. DOCTERS v. LEEUWEN in Further India on *Ficus retusa* L. at Bangkok (9. X. 1920; No. 50, together with *Gigantothrips elegans* and *Mesothrips jordani* on old leaf galls,—No. 51, together with one *Leptothrips constrictus* in young leaf galls); and on *Ficus benjamina* L. at Bangkok (No. 48; 3. X. 1920; together with one *Gynaikothrips* sp. and one *Androthrips melastomae*) and at Saigon (No. 55; 17. X. 1920.—No. 78; 28. X. 1920, together with *Androthrips melastomae*, *Leptothrips constrictus* and *Mesothrips-jordani*.)

Further distribution: Java Algeria, Canary Islands, Cuba, Porto Rico, Florida.

36. *Mesothrips jordani* ZIMMERMANN.

1900. ZIMMERMANN, Bull. Inst. Bot. Buitenzorg, VII, p. 16.

1910. *Phloeothrips similis* BAGNALL, Trans. Nat. Hist. Soc. Northumberland, N. S., III, 2, p. 12.

1911. KARNY, Centralbl. Bakteriöl., II. Abt., xxx, p. 559—562.

1912. KARNY, Marcellia, XI, p. 148.

1913. KARNY AND DOCTERS v. LEEUWEN-REIJNVAAN,
Bull. Jard. Bot. Buitenzorg, (2) X, p. 7, 8, 11, 68.

1916. KARNY AND DOCTERS v. LEEUWEN-REIJNVAAN,
Zeitschr. wiss. Ins.—Biol., XII, p. 130.

Collected by Mr. DOCTERS v. LEEUWEN in leaf galls on *Melastoma malabathricum* L. (No. 42; at Klong Chang, Siam; 1. X. 1920; together with *Gynaikothrips chavicae* and one *Androthrips melastomae*), on *Ficus retusa* L. (No. 50; at Bangkok; 9. X. 1920; together with *Gigantothrips elegans* and *Gynaikothrips uzeli*), and on *Ficus benjamina* L. (No. 78; at Saigon; 28. X. 1920; together with *Leptothrips constrictus*, *Androthrips melastomae* and *Gynaikothrips uzeli*).

Was hitherto known only from Java.

37. **Mesothrips ustulatus** *n.sp.*

Female. Male.—General colour yellowish brown. Head dark brown, gradually somewhat paler backwards. Abdomen gradually darker backwards, the last segments brownish black. Legs brownish yellow, but the middle and hind tibiae considerably darker than the femora. First and second antennal segment greyish brown, the latter gradually yellowish towards the apex. The following joints brownish yellow, the fourth a very little, fifth distinctly shaded with grey in distal half, sixth segment yellowish in basal third, further greyish brown, seventh and eighth entirely dark greyish brown. Wings clear, hyaline, a very little yellowish at extreme base and indistinctly shaded with grey in distal part along the margins.

Head about one and a half times as long as wide; cheeks converging backwards and distinctly constricted at base, set with some very stout bristles. Eyes moderately large, occupying about one third of the length of head, with rounded hind margin. Ocelli very large, with distinct pigment-cups, nearly touching one another, arranged in a rectangular triangle; the posterior ones touching the inner margin of eyes about at its midst. Postocular bristles sharply pointed, about as long as the eyes, not quite twice as long as the space between their insertion and the hind margin of eyes. Dorsal surface of head smooth.

Antennæ about one and a half times as long as head, inserted very near the fore margin of eyes; fore head between them somewhat produced. First segment cylindrical, wider than long. Second segment cup-shaped, somewhat narrower than the first, not quite twice as long as wide. Third segment clavate, as wide as the first, twice as long as wide. The following segments nearly fusiform, but widest behind their middle, gradually diminishing in length and width. Seventh segment cylindrical, narrowed towards the base, half as wide as the third, more than twice as long as wide. Eighth joint cylindrical in basal half, bluntly conical at apex, two-thirds as long and wide as the preceding one.

Terminal bristles of antennal joints nearly half as long as the segments themselves; sixth joint set with bristles in the distal half,

the following ones nearly throughout their whole length. Median bristle line in the apical third of seventh segment, then interrupted at base of eighth, further reaching to apex of the latter.

Sense area of second segment small, transversely ovate, placed distinctly behind the middle. Sense cones about as long as the terminal bristles, slender, sharply pointed at apex, that of seventh segment a little overreaching the middle of apical joint.

Mouth cone broadly rounded, not reaching to the middle of prosternum. Maxillary palpi cylindrical, about half as long as the mouth cone, with a short basal and a long, cylindrical apical joint. Labial palpi a little narrower than the maxillary ones, very short, nearly abortive.

Prothorax about as long as head (in the megalomeric form) or distinctly shorter (in the micromeric form), widened backwards, across fore coxæ about one and a half times as wide as long. All bristles sharply pointed. Those of hind angles not quite half as long as the prothorax, the posteromarginal ones distinctly longer; their insertion about twice as far distant from the middle of hind margin as from the posterolateral bristles. Mediobasal setæ only a little shorter than those of hind angles, a little close to these than to the anterolateral bristles. These very short, hair-like, hardly as long as the distance of their insertion from the fore margin of prothorax. Anteromarginal bristles not distinguishable. Prosternum indistinctly dotted, without well-defined smooth plates.

Fore coxæ longitudinally ovate, their bristles stout, sharply pointed, about half as long as the posterolateral ones. By the shape of fore legs there may be distinguished — similarly as in *M. pyctes* — two forms of this species. One has the fore femora one and a half times as long as head, and the fore tarsi armed with a sharp tooth-like process, nearly as long as the tibia is wide; in the other form the fore femora are distinctly smaller, not quite as long as head, and the fore-tarsal tooth hardly half as long as the tibial is wide.

Pterothorax a very little wider than prothorax across fore coxæ, not quite as long as wide, with rounded fore angles and somewhat arched sides converging backwards. Middle coxæ distinctly smaller than the hind ones and about twice as far distant from each other. Middle and hind legs stout; with short hairs along their

margins and some stouter bristles at the end of tibiae. Tarsi without teeth.

Wings reaching about to the seventh abdominal segment, a little constricted at their middle; fore pair at base near the fore margin with three equidistant, sharply pointed bristles, gradually increasing in length, the third about one and a half times as long as the wing is wide. Hind margin with about 10 double cilia before the apex.

Abdomen slender, somewhat narrower than pterothorax, not quite five times as long as wide. All bristles stout, sharply pointed, on segments 2-7 about as long as the segments themselves, on 8 distinctly shorter. Bristles of ninth segment nearly as long as the tube. Wing-retaining spines well developed, slender, distinctly S-shaped. The distance between the tips of posterior ones on segments 3-6 not fully one and a half times as long as the spines themselves; spines on 2 and 7 distinctly shorter. The fore pair on each segment only a little shorter, but distinctly thinner than the posterior ones. Tube about three-fourths as long as head, with straight sides converging backwards, about two and a half times as long as wide at base, at apex nearly half as wide as at base. The longer terminal bristles stout at base, hair-like at apex, about two-thirds as long as tube; the shorter ones hair-like, about one third of the length of the others.

Measurements of megalomeros form (female, male):—

Total length of antennae 0'52 mm. I. joint 0'03 mm. long, 0'045 mm. wide; II. joint 0'06 mm. long, 0'035 mm. wide; III. joint 0'09 mm. long, 0'045 mm. wide; IV. joint 0'085 mm. long, 0'045 mm. wide; V. joint 0'08 mm. long, 0'037 mm. wide; VI. joint 0'07 mm. long, 0'03 mm. wide; VII. joint 0'06 mm. long, 0'023 mm. wide; VIII. joint 0'04 mm. long, 0'013 mm. wide. Head 0'34 mm. long, 0'21 mm. wide. Prothorax 0'34 mm. long, 0'48 mm. wide (across fore coxae.) Fore femora 0'52 mm. long, 0'22 mm. wide; fore tibiae (including tarsi) 0'28 mm. long, 0'08 mm. wide. Pterothorax 0'45 mm. long, 0'50 mm. wide. Middle femora 0'22 mm. long, 0'08 mm. wide; middle tibiae (including tarsi) 0'25 mm. long, 0'06 mm. wide. Hind femora 0'32 mm. long, 0'09 mm. wide; hind tibiae (including tarsi) 0'28 mm. long, 0'07 mm. wide. Length of wings (without fringe)

1'3 mm. Abdomen (including tube) 1'85 mm. long, 0'4 mm. wide. Length of tube 0'27 mm. width at base 0'10 mm. at apex 0'04 mm. Total length 2'4-3'1 mm.

Measurements of micromerous form (female, male):—
Total length of antennae 0'39 mm. I. joint 0.025 mm. long, 0'035 mm. wide; II. joint 0.05 mm. long, 0'03 mm. wide; III joint 0'06 mm. long, 0'035 mm. wide; IV. joint 0'06 mm. long, 0'035 mm. wide; V. joint 0'06 mm. long, 0'032 mm. wide; VI. joint 0'055 mm. long, 0'025 mm. wide; VII. joint 0'05 mm. long, 0'023 mm. wide; VIII. joint 0'035 mm. long, 0'015 mm. wide. Head 0'27 mm. long, 0'18 mm. wide. Prothorax 0'20 mm. long, 0'32 mm. wide (across fore coxae). Fore femora 0'25 mm. long, 0'12 mm. wide; fore tibiae (including tarsi) 0'18 mm. long, 0'06 mm. wide. Pterothorax 0'30 mm. long, 0'34 mm. wide. Middle femora 0'15 mm. long, 0'06 mm. wide; middle tibiae (including tarsi) 0'15 mm. long, 0'04 mm. wide. Hind femora 0'23 mm. long, 0'07 mm. wide; hind tibiae (including tarsi) 0'30 mm. long, 0'05 mm. wide. Length of wings (without fringe) 1. mm. Abdomen (including tube) 1'3 mm. long, 0'27 mm. wide. Length of tube 0'19 mm., width at base 0'07 mm., at apex 0'035 mm. Total length 2'1-2'6 mm.

This species was found by Mr. DOCTERS v. LEEUWEN in leaf galls on *Memecylon* sp. (No. 64), at Saigon, Cape St. Jacques, dated 21. X. 1920.

Mesothrips ustulatus is very similar to *jordani* in its whole appearance, but directly distinguished by its very characteristic colour, especially of antennae. Even in entirely black specimens of *jordani* the apical joints of antennae are always considerably paler than in *ustulatus*.

38. *Mesothrips vitripennis* n. s.p.

General colour dark brown. Fore tibiae and all tarsi brownish yellow.

Antennae coloured as in the preceding species. Wings clear, hyaline, pale yellow only at extreme base.

Head one and one-third times as long as wide; cheeks arched, converging backwards, constricted at base, set with a few very short spines. Eyes, ocelli and postocular bristles similar to those of the

preceding species, but the hind margin of eyes nearly truncate, and the bristles inserted close behind it. Mouth-cone rounded at apex, reaching about to the middle of prosternum. Palpi as in *ustulatus*.

Antennae about one and two-thirds times as long as head, inserted close to the fore margin of eyes, fore head between them a little produced. Shape and chaetotaxy of joints much as in *ustulatus*; but the third and fourth joint equal in length and width, and the sixth as wide as the fifth; sense cones somewhat smaller than in the preceding species.

Prothorax nearly as long as head, across fore coxae not quite twice as wide as long. All bristles stout, pointed at apex. The posterolateral ones hardly half as long as prothorax, posteromarginal setae a little shorter. Anterolateral bristles a little more than half as long as these of hind angles, mediolateral one of the same length, inserted in the middle between the antero- and posterolateral setae. Anteromarginal bristles only a little shorter and weaker than those of the fore angles, as far distant from them as from the middle line. Prosternum as in *Eothrips laticeps*.

Fore coxal bristle about two-thirds as long as the posterolateral ones, stout, sharply pointed at apex. Behind them a few very short bristles. Fore femora a little longer than head, about half as wide as long. Fore tarsus with a long, somewhat curved, sharply pointed tooth.

Pterothorax a little narrower than prothorax across fore coxae, as long as wide, with somewhat protruding fore angles and arched sides converging backwards. Sutures of meso- and metasternum similar to those of *Eothrips laticeps*, but the median, forwardly-directed suture-angle on both segments acute. Middle and hind legs as in *ustulatus*.

Wings reaching about to the sixth abdominal segment, similar to those of the preceding species, but the third basal bristle hardly as long as the wing is wide, more distant from the second than this from the first. Hind margin with 8-12 duplicated fringe-hairs.

Abdomen as in *ustulatus*, but the bristles of ninth segment and tube a little shorter. Wing-retaining spines as in the preceding species, but both pairs still more curved, especially before the apex.

Tube as in *ustulatus*, but only a little more than twice as long as wide at base.

Measurements :—Total length of antennae 0'43 mm. I joint 0'025 mm. long, 0'04 mm. wide ; II. joint 0'05 mm. long, 0'035 mm. wide ; III. joint 0'08 mm. long, 0'04 mm. wide ; IV. joint 0'08 mm. long, 0'04 mm. wide ; V. joint 0'065 mm. long, 0'03 mm. wide ; VI. joint 0'055 mm. long, 0'03 mm. wide ; VII. joint 0'05 mm. long, 0'025 mm. wide ; VIII. joint 0'03 mm. long, 0'01 mm. wide. Head 0'26 mm. long, 0'20 mm. wide. Prothorax 0'24 mm. long 0'42 mm. wide (across fore coxae). Fore femora 0'29 mm. long, 0'14 mm. wide ; fore tibiae (including tarsi) 0'30 mm. long, 0'05 mm. wide. Pterothorax 0'40 mm. long and wide. Middle femora 0'26 mm. long, 0'07 mm. wide ; middle tibiae (including tarsi) 0'26 mm. long, 0'05 mm. wide. Hind femora 0'29 mm. long, 0'08 mm. wide ; hind tibiae (including tarsi) 0'35 mm. long, 0'06 mm. wide. Length of wings (without fringe) 0'9 mm. Abdomen (including tube) 1'7 mm. long, 0'34 mm. wide. Length of tube 0'20 mm., width at base 0'09 mm., at apex 0'04 mm. Total length 2'1-2'7 mm.

Collected by Mr. DOCTERS v. LEEUWEN in leaf galls on ? *Aporosa* (No. 57), together with *Eothrips laticeps*, at Saigon (native forest Tri Han), ±100 mm., dated 19. X. 1920.

Comes in my species key (Zeitschr. wiss. Ins.-Biol., XII, p. 138-131 ; 1916) nearest to *pyctes*, but differs by its somewhat smaller size and its clear wings. Diverging from the preceding species by the uniform colour of body, shorter head and especially the chaetotaxy of prothorax, from *australiae* HOOD by the clear wings and from *alluaudi* VUILLET (Madagascar) by the arched cheeks, the smaller number of double cilia and the much shorter tube.

Subfamily Macrothripinae KARNY.

39. **Dinothrips sumatrensis** BAGNALL.

1908. BAGNALL, Trans. Nat. Hist. Soc. Northumberland 1., N. S., III, 1, p. 11,

1922. KARNY. Beitr. mal. Thys., VI Treubia, III, 1 (with list of literature).

One male of this common and widely distributed, bark-inhabiting species collected by Mr. DOCTERS v. LEEUWEN in a railway-car near Banksut, Siam (No. 47), dated 2. X. 1920.

Further distribution. Benghalis, Ceylon, Tonkin, Sebroang, Burma, Penang, Singapore, Sumatra, Mentawai, Nias, Engano, Java, Borneo, Sarawak, Philippine Islands, Buru, New Guinea.

Family Idolothripidae BAGNALL.

40. *Gigantothrips elegans* ZIMMERMANN.

1900. ZIMMERMANN, Bull. Inst. Bot. Buitenzorg, VII, p. 18.
 1908. *Panurothrips gracilis* BAGNALL, Trans. Nat. Hist. Soc. Northumberland, N. S., III, 1, p. 28.
 1910. *Panurothrips gracilis* BAGNALL, Trans. Nat. Hist. Soc. Northumberland, N. S., III, 2; p. 3.
 1911. DOCTERS v. LEEUWEN-REIJNVAAN, Marcellia, X. p. 75 (without name).
 1911. KARNY, Centralbl. Bakteriöl., II. Abt., XXX, p. 559-562.
 1912. KARNY, Marcellia, XI, p. 158.
 1913. KARNY AND DOCTERS v. LEEUWEN-REIJNVAAN, Bull. Jard. Bot. Buitenzorg, (2) K, p. 4, 8, 117.
 1916. KARNY AND DOCTERS v. LEEUWEN-REIJNVAAN, Zeitschr. wiss. Ins.—Biol., XII, p. 189.
 1916. BAGNALL, Ann. Mag. Nat. Hist., (8) XVII, p. 403 *Gigantothrips elegans* and *G. gracilis*.
 1919. UICHANCO, Philipp. Journ. Sci., XIV, 5, p. 547; pl. XIV, fig. 3.

I have united here ZIMMERMANN'S *elegans* and BAGNALL'S *gracilis*. The latter was described in 1908 from three specimens from Siam, when BAGNALL was not yet acquainted with ZIMMERMANN'S paper. This author said then: "Tube.....twice as long as the head". In 1910 he recorded the same species ("*gracilis*") from Java with the remark: "The head is.....more than one-half the length of the tube." Evidently BAGNALL supposed the length of tube to be not absolutely constant. But in 1916, when he also received material of ZIMMERMANN'S *elegans*, he used the length of tube as specific character: "the tube.....in *gracilis* about as long as the abdominal segments 7-8" (should be 9) "together, and in *elegans* about 0,75 the length of these segments." But this character is somewhat variable, and in the material before me there are specimens with a tube one and a half times as long as head, others with

it twice as long, and all possible intermediate forms between these. The comparison of tube length with the length of the preceding segments, as used by BAGNALL, is further not useful, because then the relative length is dependent not only on the length of tube, but also on the more or less contracted state of abdomen. BAGNALL further makes *gracilis* larger than *elegans*. This is not really so: BAGNALL (1908) gave for *gracilis* the length 5.2-6.0 mm.; for *elegans*, ZIMMERMANN gives 5.5-5.6 mm. It was not to be expected that two so slightly diverging forms, in the same galls on the same plant ("Waringin tree") and from the same localities (Java), should belong to two different species.

Collected by Mr. DOCTERS v. LEEUWEN on old leaf galls on *Ficus retusa* L. (No. 50) at Bangkok (9. X. 1920), together with *Gynaikothrips uzeli* and one *Mesothrips jordanii*.

Hitherto known from Java, Philippine Islands and Siam.

Family Hystricothripidae KARNY.

41. *Leeuwenia aculeatrix* KARNY.

1922. KARNY, Beitr. mal. Thys., VIII.—Treubia, III, 1.

In leaf galls on *Eugenia* sp. (No. 77), collected by Mr. DOCTERS v. LEEUWEN at Saigon (28. X. 1920), together with *Gynaikothrips daetymon*. The extraordinary long spines along the whole tube distinguish it easily from the other *Leeuwenia*'s.

A Former President.

It is with the greatest regret that we have to record the death of Dr. Oscar Frankfurter, PH. D., who for many years was the President of the Siam Society. He was elected in January 1906, and most worthily held that office for a longer period than any other of our Presidents. He died in Hamburg on the 1st October this year after a short illness, in the 71st year of his age. Dr. Frankfurter was born in Hamburg on the 23rd February, 1852, and was educated at the Universities of Göttingen and Berlin and took the degree of Ph. D. He then studied Eastern Languages at Oxford, and joined the Siamese government service in 1884. He was employed in various posts, including those of Chief Secretary in the General Adviser's Office, and Adviser in the Foreign Office, until the year 1905, when he received the appointment of Chief Librarian of the National Library, Bangkok, which post he occupied until the declaration of war by Siam in 1917.

Dr. Frankfurter was a sound scholar, and one of the kindest of men: he was one of the most valued and regular contributors to the Journal of the Society, and held the respect of all who knew him. His favorite motto was the saying attributed to Heraclitus, *panta rhei kai ouden menei*, but his memory will remain deep in the hearts of those to whom he was guide, philosopher and friend.

On hearing of his death the Council of the Society addressed the following letter of condolence to his widow:—

THE SIAM SOCIETY,

Bangkok,

December 15th, 1922.

DEAR MRS. FRANKFURTER,

The Siam Society has learned with deep sorrow of the death of Doctor Frankfurter and, at the unanimous request of the Council and Members, I write to offer you our heartfelt condolences in your sad affliction.

The Doctor will always live in the memory of the Society as the most enthusiastic of its original founders and as the foremost of the small and devoted band by whom the Society was kept in being during a time when its existence was threatened.

Those of us who enjoyed the privilege of association with your husband through the long period of his presidentship of the Society, deplore his death as that of an old and valued friend, and, remembering his many endearing qualities, can sympathise with you in your bereavement.

We trust that the knowledge of the respect and esteem in which the Doctor was held by us all, may bring you some small degree of comfort at this time of your great sorrow.

Believe me, Dear Mrs. Frankfurter,
Yours very truly,
W. A. GRAHAM,
President,
The Siam Society.

Dr. Frankfurter's contributions to the Journal of this Society include the following articles :—

Vol. I., (1905).—The Aims of the Society.

—King Mongkut.

Vol. II., Part 1, (1906).—Note on a supposed Dutch Translation of a Siamese State Paper in 1688.

—In memoriam Geheimrat Bastian.

Vol. III., Part 2, (1907).—Some suggestions for Romanizing Siamese.

—Secret Writing in Siamese.

Vol. IV., Part 1, (1907).—Siamese Missions to Ceylon in the 18th Century.

—The Romanizing of Siamese.

Vol. V., Part 4, (1909).—"Siam in 1688," translation of an early narrative, with introduction and notes.

Vol. VI., Part 3, (1909).—Translation of "Events in Ayudhya, 686–966," a manuscript presented to the National Library by Hluang Prasöt Aksornit, with introductory note on the indigenous sources of Siamese history.

—Some Remarks on Kaempfer's Description of Siam 1690.

Vol. VII., Part 2, (1911).—The Late King Chulalongkorn.

Vol. VIII., Part 3, (1912).—The Mission of Sir James Brooke to Siam.

Vol. X., Part 2, (1913).—The Attitudes of the Buddha, illustrated.

Vol. XI., Part 1, (1914).—Unofficial Mission of John Morgan.

Vol. XI., Part 2, (1915).—The Story of the Records of Siamese History, Translation of H. R. H. Prince Damrong's Preface to the History.

His other publications comprised the following:—

Handbook of Pāli, being an elementary grammar, a chrestomathy and a glossary.—London and Edinburgh, 1883.

Ein siamesischer Eulenspiegel: die Erlebnisse des Sri Thanonxai.—T'oung-Pao, July 1894, pp. 234-259.

Die böse Sieben.—T'oung-Pao, December 1894, pp. 393-397.

Translation into English of a sermon preached by Somdet Phra Vanarat on April 19, 1895, on the occasion of the demise of H. R. H. Prince Chow Fa Maha Vahirunhis.

Traume und ihre Bedeutung nach einem siamesischen Traumbuch. — Internat. Archiv für Ethnographie, VIII, 1895, pp. 150-153.

Die Emancipation der Sklaven in Siam.—Festschrift für Adolf Bastian zu seinem 70. Geburtstage, Berlin, 1896, pp. 575-582.

Siam.—Jahrbuch des internat. Vereinigung für vergleichende Rechtswissenschaft, III, 1896, pp. 824-828.

Die rechtlichen und wirtschaftlichen Verhältnisse in Siam.—Berlin, 1896.

Die siamesische Palastsprache.—Gurupūjākaumudi, Festgabe Albrecht Weber, Leipzig, 1896, pp. 95-96.

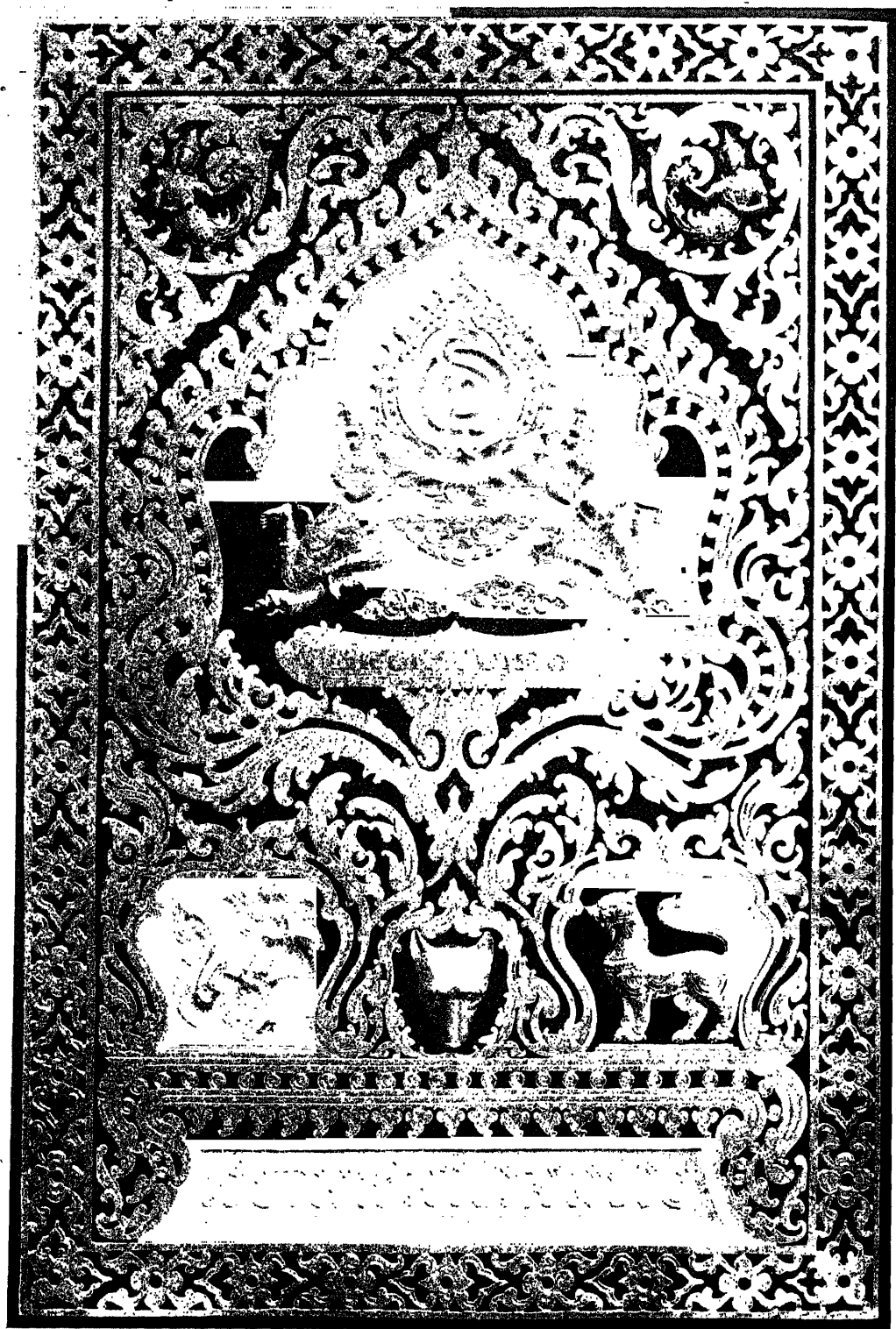
Elements of Siamese Grammar.—Bangkok and Leipzig, 1900.

Siam.—The East of Asia magazine, 1902, pt. 2, pp. 115–121.

Chapters V. (Siam from an historical standpoint), VI. (Language of Siam), VII. (Religion of Siam), in A. Cecil Carter's The Kingdom of Siam, New York, London, 1904.

A proposed change in the Siamese era Chulasakaraj 1,000 (A.D. 1638).—T'oung-Pao, March 1907, pp. 99–104.

Chapters on Buddhism (pp. 207–214), and on the National Library (pp. 248–251) in Twentieth Century Impressions of Siam 1908.



Design on Cover to the Address.

**The 60th Anniversary of the Birth of H. R. H.
Prince Damrong Rajanubhab, Vice Patron
of the Siam Society.**

The official celebration of the completion of the "Great Cycle" of 60 years in the life of our highly respected Vice-Patron, H. R. H. Prince Damrong Rajanubhab, took place on November 13th, 1922 and the three succeeding days at His Royal Highness' residence Varadis Palace, Bangkok. The Siam Society took the opportunity of presenting His Royal Highness with an address of congratulation on the happy occasion, and also in grateful recognition of the continual interest which H. R. H. has shown in the Society ever since he became its Vice-Patron—which is since its foundation eighteen years ago.

All the members of the Council then in Bangkok and about fifty of the members, were received by H. R. H. on Wednesday November 15th, at the Varadis Palace, at 3.45 p.m. when Mr. W. A. Graham, the President, made the presentation and read the address, which was as follows:—

"To His Royal Highness Prince Damrong Rajanubhab.

"May it please Your Royal Highness,

"On this happy occasion when the celebration of the sixtieth anniversary of the Birthday of Your Royal Highness is taking place, the Members of the Siam Society have great pleasure in approaching Your Royal Highness with this address, and in joining their earnest and most sincere congratulations to those which are now being offered to Your Royal Highness by your innumerable friends and admirers.

"The Members of the Siam Society have long recognised the fact that Your Royal Highness has been one of the principal mainstays of the Society ever since, at the time of its foundation, you were pleased to honour it by becoming its Vice-Patron; and the Society rejoices in this opportunity to give expression to the feelings of gratitude and esteem by which it is actuated towards you.

"As the kindly Adviser and friend of the Society, as a constant contributor to the Journal and as the guide of others who have been freely encouraged to draw upon the inexhaustible reservoir of your knowledge in the course of their studies, Your Royal Highness has conferred benefits upon the Society, the importance of which it is impossible to magnify.

"The Society is proud of its long association with one, who, as the historian of his father-land is strengthening the real foundation of that true patriotism now daily growing amongst the people, and the Society trusts that the ties of this association may continue, and be drawn ever closer in the long and felicitous years of health, happiness and work that the Society fervently prays may lie before Your Royal Highness."

In his reply, the Prince said that he did not feel worthy of such an honour, but that he had to yield to the majority which seemed to be of a different opinion. The beautiful address, he assured them, would always be kept by himself and his descendants as a precious souvenir. He added that his interest in the Siam Society was due to three reasons:—In the first place the Society had since its foundation received the patronage of both the late King and His present Majesty. Secondly, his interest in historical research made him in sympathy with the aims of the Society, and thirdly he felt that all members of the Society were true friends of Siam.

In conclusion he wished all prosperity to the Society and expressed the hope that more Siamese would become interested in its work.

The address—of which two photographs are shown herewith—was designed and executed by the Arts and Crafts School. The case containing it is a stiff card-board portfolio covered in maroon-coloured leather. The front of the case is covered with a beautiful design in silver—the border and field being of pierced silver of a—foliated pattern interspersed with allegorical figures in repoussé. The centre contains two conventional "tevedas" upholding a lotus flower bearing H. R. H.'s monogram with a label underneath bearing

To
His Royal Highness
Prince Daimong Rajmubhab.

May it please Your Royal Highness

On this happy occasion when the celebration of the sixtieth anniversary of the birthday of Your Royal Highness is taking place, the members of the Siam Society have great pleasure in addressing Your Royal Highness with this Address and in joining their warmest and most sincere congratulations to those wishes now being offered to Your Royal Highness by your innumerable friends and admirers.

The members of the Siam Society have long recognised the fact that Your Royal Highness has been one of the principal mainstays of the Society ever since, at the time of its foundation, you were placed in a position to become its Vice Patron; and the Society desires in this opportunity to give expression to the feelings of gratitude and esteem by which it is actuated towards you.

As the kindly Adviser and Friend of the Society, as a constant contributor to the Journal and as the possessor of others who have been freely encouraged to draw upon the inexhaustible reservoir of your knowledge for the purpose of their studies, Your Royal Highness has conferred benefits upon the Society the importance of which it is impossible to magnify.

The Society is proud of the long association with one who, as the historian of his Father's reign is laying the real foundation of that true patriotism now daily growing amongst the people, and the Society trusts that the ties of this association may continue and be drawn ever closer in the long and felicitous years of health, happiness and work that the Society fervently prays may lie before Your Royal Highness.

Wachana P. J. Jantana Chao Phya Bualadeb.
Rangsoot W. J. Jantana
K. H. Lunnin J. J. Jantana
J. J. Jantana J. J. Jantana
J. J. Jantana J. J. Jantana
J. J. Jantana J. J. Jantana

the B. E. dates 2405-2465. Lower down appears the head of a dog denoting the year of H. R. H.'s birth. This is supported on the right by the badge of the Ministry of the Interior and on the left by that of the Royal Library. At the bottom is another label with the words, in Siamese, "Presented by the Siam Society." The whole design in burnished silver on the rich red background of leather is highly effective, and is a remarkable specimen of the skilled craftsmanship of the Arts and Crafts School.

The address itself is engrossed upon hand made Siamese paper (*kradat kloi*) and printed in old English characters—the title and capitals being illuminated by hand. Bordering the address is a beautiful ornamental design in gold, containing seven miniature paintings of ancient temples in various parts of the country associated with His Royal Highness's travels and researches.

The signatures of the Princes and high Government officials connected with the Society and those of the Council, appear below the address, and the following two pages contain the names of more than one hundred other members of the Society.

22 N. J

"A book that is shut is but a block"

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